

CALIFORNIA COASTAL COMMISSION

SAN DIEGO AREA
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original staff report

W16a

Addendum

May 13, 2014

To: Commissioners and Interested Persons

From: California Coastal Commission
San Diego Staff

Subject: Addendum to **Item W16a**, Coastal Commission Permit Application
#6-13-0437 (Presnell/Graves LLC.), for the Commission Meeting of May
14, 2014

Staff recommends the following changes be made to the above-referenced staff report.
Language to be added is underlined; language to be deleted is shown in ~~strikeout~~:

1. On Page 2 of the staff report, the third complete paragraph shall be modified as follows:

The Commission's geologist has also found that the new proposed seawall addition will extend the useful life of the southernmost 26 ft.-long portion of the existing seawall fronting the subject bluff top structure by at least 10 years, and perhaps 20 or more years by protecting that portion of the existing seawall from outflanking (Exhibit 2). The existing seawall was approved by the Commission with a proposed 30 year design life (1999-2029), and mitigation for impacts to sand supply impacts were calculated based on this design life. Since the new proposed seawall addition will extend the useful life of the existing seawall well beyond the previously approved design life, it will be necessary to reevaluate the impacts to public resources should the existing seawall remain beyond the initial approved mitigation period. Special Condition 3 advises the applicant and the other property owners subject to the CDP for the existing seawall that, consistent with LUP policies 4.17, 4.18, and 4.52, additional mitigation for any on-going impacts to coastal resources resulting from the existing seawall will be reassessed on a case-specific basis if the existing seawall remains beyond the initial period for which the previous mitigation was secured and expansion and/or alterations are proposed to the existing seawall or if any significant alteration or improvement is proposed for the associated bluff top structures or if redevelopment (as defined in Special Condition 5) is proposed for the associated bluff top structures.

2. On Page 7 of the staff report, Special Condition #1 shall be modified as follows:

1. **Revised Final Plans.** PRIOR TO ISSUANCE OF THIS COASTAL DEVELOPMENT PERMIT, the applicant shall submit for review and written approval of the Executive Director, final plans for the seawall extension that are in substantial conformance with the submitted plans dated June 13, 2013 by ~~Soil Engineering Construction, Inc.~~ Terra Costa Consulting Group...

3. On Page 9 of the staff report, Special Condition #3c shall be modified as follows:

c. The shoreline armoring approved by this CDP results in the extension of the useful life of the 26 ft.-long portion of the existing seawall fronting the bluff top home at 249 Pacific Avenue (approved pursuant to CDP #6-99-100/Presnell et. al.). Pursuant to the CDP #6-99-100, the applicant previously provided mitigation for the impacts of the existing seawall for a 30-year period (1999-2029). Additional reassessment for impacts to sand supply, public access and recreation and any other relevant coastal resources impacted by the existing seawall will be required if the existing seawall remains beyond the initial approved mitigation period and if expansion and/or alterations to the existing seawall is proposed or if any significant alteration or improvement is proposed for the existing bluff top structures or if redevelopment (as defined in Special Condition 5) is proposed for the existing bluff top structures ~~are proposed.~~

4. On Page 10 of the staff report, Special Condition #5 shall be modified as follows:

5. **Future Development Reliance on Permitted Armoring.** No future development, which is not otherwise exempt from coastal development permit requirements, or redevelopment of the existing structure on the bluff top ~~portion of the applicant's property,~~ shall rely on the permitted seawall extension to establish geologic stability or protection from hazards. Such future development and redevelopment on the site shall be sited and designed to be safe without reliance on shoreline armoring. As used in these conditions, "redeveloped" or "redevelopment" consists of alterations including: (1) additions to an existing structure; (2) exterior and/or interior renovations, (3) and/or; (3) demolition of an existing bluff home or other principal structure, or portions thereof, which results in: alteration of 50 percent or more of major structural components including exterior walls, floor and roof structure, and foundation, or a 50 percent increase in floor area. Alterations are not additive between individual major structural components; however, changes to individual major structural components are cumulative over time from, totaled cumulatively over time on or after the date of certification of the Land Use Plan LUP, as further defined in the Solana Beach LUP, as approved by the Commission.

5. On Page 10 of the staff report, Special Condition #6b shall be modified as follows:

- b. Annual measurements of any differential retreat of bluff material between the face of the natural bluff and the seawall face, at the north and south ends of the seawall and at 20-foot intervals (maximum) along the top of the seawall face/bluff face intersection. The program shall describe the method by which such measurements shall be taken.

Provisions for submittal of a report to the Executive Director of the Coastal Commission by May 1 of each year (beginning the first year after construction of the project is completed) for a period of three years and then, each third year following the last annual report, for ~~the 20 years for which this seawall is approved~~ so long as the seawall remains...

6. On Page 15 of the staff report, Special Condition #16 shall be modified as follows:

16. Encroachment Agreement. PRIOR TO COMMENCEMENT OF CONSTRUCTION, the applicant shall submit to the Executive Director for review and approval documentation demonstrating that the applicant has executed an Encroachment Agreement with the City, recognizing that the seawall extension is located on property owned by the City and is subject to removal by request of the City at any time, or evidence that an Encroachment Agreement is not required by the City. Prior to removal of the encroachment, the applicant shall submit an amendment to this CDP within 90 days proposing removal of the encroachment in its entirety and shall only remove the encroachment after the Commission issues the CDP amendment to the applicant.

7. On Page 21 of the staff report, the following shall be added after the “Higher Seawall/Clean Sand Lens Encapsulation” policy language:

Policy 4.17: *New development shall be set back a safe distance from the bluff edge, with a reasonable margin of safety, to eliminate the need for bluff retention devices to protect the new improvements. All new development, including additions to existing structures, on bluff property shall be landward of the Geologic Setback Line (GSL) as set forth in Policy 4.25. This requirement shall apply to the principal structure and accessory or ancillary structures such as guesthouses, pools, tennis courts, cabanas, and septic systems, etc. Accessory structures such as decks, patios, and walkways, which are at-grade and do not require structural foundations may extend into the setback area no closer than five feet from the bluff edge. On lots with a legally established bluff retention device, the required geologic analysis shall describe the condition of the existing seawall; identify any impacts it may be having on public access and recreation, scenic views, sand supply and other coastal resources; and evaluate options to mitigate any previously unmitigated impacts of the structure or modify, replace, or remove the existing protective device in a manner that would eliminate or reduce those impacts. In addition, any*

significant alteration or improvement to the existing structure shall trigger such review (i.e. the analysis of the seawall) and any unavoidable impacts shall be mitigated.¹

8. On Page 24 of the staff report, the following shall be added after Policy 4.52:

The LUP defines Bluff Top Redevelopment as follows:

Bluff Top Redevelopment: Shall apply to proposed development located between the sea and the first public road paralleling the sea (or lagoon) that consists of alterations including (1) additions to an existing structure, (2) exterior and/or interior renovations, (3) and/or demolition of an existing bluff home or other principal structure, or portions thereof, which results in:

(a) Alteration of 50% or more of major structural components including exterior walls, floor and roof structure, and foundation, or a 50% increase in floor area. Alterations are not additive between individual major structural components; however, changes to individual major structural components are cumulative over time from the date of certification of the LUP.

(b) Demolition, renovation or replacement of less than 50% of a major structural component where the proposed alteration would result in cumulative alterations exceeding 50% or more of a major structural component, taking into consideration previous alterations approved on or after the date of certification of the LUP; or an alteration that constitutes less than 50% increase in floor area where the proposed alteration would result in a cumulative addition of greater than 50% of the floor area, taking into consideration previous additions approved on or after the date of certification of the LUP.²

9. On Page 35 of the staff report, the first complete paragraph shall be modified as follows:

...In this particular case, Special Condition 5 defines redevelopment as alterations, including additions, exterior or interior renovations, or demolition that results in a 50 percent or greater alteration of a major structural component (including exterior walls, floor and roof structures) or a 50 percent increase in floor area, cumulatively over time on or after certification of the City's LUP. Furthermore, changes to major structural elements are not additive between individual elements, while alterations to individual major structural elements are cumulative. Thus, if in the future, the applicant proposed to modify 40% of the exterior walls and 30% of the roof structure; this would not

¹ Language shown as modified by a Land Use Plan amendment approved by the Commission on January 9, 2014 (but not yet formally accepted by the City).

² Language shown as modified by a Land Use Plan amendment approved by the Commission on January 9, 2014 (but not yet formally accepted by the City).

be considered redevelopment because it relates to two different major structural components. However, if the applicant were to come back for a subsequent CDP to modify an additional 10% of the exterior walls or an additional 20% of the roof structure, the project would be considered redevelopment because it would result in a cumulative alteration to 50% of a major structural component. Additions are also cumulative over time, such that an initial 25% addition would not be considered redevelopment; but a subsequent 25% addition would result in a cumulative 50% increase in floor area, and would thus constitute redevelopment.

10. On Page 35 of the staff report, the third complete paragraph shall be modified as follows:

Special Condition 10 requires that the applicant inform the Executive Director of any changes to the project required by other agencies and Special Condition 16 requires that, prior to commencement of construction; the applicant must execute an Encroachment Agreement approved by the City (consistent with Policy 4.48 of the City's approved LUP), or provide documentation that an Encroachment Agreement is not required by the City. Pursuant to the encroachment agreement, the applicant shall recognize that the proposed seawall is located on City property and that the City may require that the seawall be removed at any time. Prior to removal of the encroachment, the applicant shall submit an amendment to this CDP within 90 days proposing removal of the encroachment in its entirety and shall only remove the encroachment after the Commission issues the CDP amendment to the applicant.

11. On Page 36 of the staff report, the second complete paragraph shall be modified as follows:

Therefore, Special Condition 6 requires monitoring and reporting plans. Monitoring of the seawall is required annually and monitoring reports must be submitted to the Commission annually for the first 3 years following construction and then every 3 years following the final annual monitoring report. More frequent monitoring reports will be required following a large "El Nino" storm event or a large earthquake. The condition requires the evaluation of the condition and performance of the proposed project and overall bluff stability, including evaluating necessary maintenance, repair, changes or modifications. The Commission engineer has found that the frequency of monitoring required for this project is necessary to ensure adequate monitoring of the seawall...

12. On Page 37 of the staff report, the last incomplete paragraph shall be modified as follows:

At the time of approval, in 1999, the applicants proposed that the seawall would have a design life of 30 years. The sand mitigation fee previously paid

by the applicant was quantified by calculating the volume of sand below the immediate area of encroachment of the seawall, the volume of sand beneath the area landward of the seawall that would otherwise have been provided if the seawall did not block the natural bluff retreat for a 30 year period (1999-2029), and the amount of sand in the bluff that would not be able to reach the beach during a 30 year period (1999-2029). Special Condition 3 serves to advise the applicant and the other 7 property owners subject to CDP #6-99-100 that, consistent with LUP policies 4.17, 4.18, and 4.52, reassessment for impacts to sand supply, public access and recreation and any other relevant coastal resources impacted by the existing seawall may be required if the existing seawall remains beyond the initial approved mitigation period and if expansions and/or alterations are proposed to the existing seawall or bluff top structures are proposed.

Furthermore, additions and/or significant alterations or improvements to blufftop homes with existing armoring devices, even those that do not qualify as “redevelopment,” may extend the life of the homes indefinitely, beyond the anticipated life of the armoring devices. Thus, property owners could continue to enjoy the benefits of shoreline armoring devices without adequately mitigating for the adverse impacts of the shoreline protection on coastal resources.

Policy 4.17, as approved by the Commission, requires applicants proposing new development (including additions) on lots protected by existing shoreline armoring, to prepare an analysis of the impacts that the existing shoreline armoring is having on coastal resources, along with consideration of the current site conditions (including existing structures and accessory improvements), and to identify opportunities to modify or replace the shoreline armoring to reduce or eliminate any adverse impacts on coastal resources not already mitigated by the property owner. The policy further requires that the geologic analysis evaluate options to mitigate any previously unmitigated impacts of existing shoreline armoring devices and identify options to modify, remove, or replace shoreline armoring at the time of any addition to a bluff top home or at the time of a significant alteration or improvement to a bluff top home. Therefore, Special Condition 3 also requires that if any significant alteration or improvement is proposed for the associated bluff top structures or if redevelopment (as defined in Special Condition 5) is proposed for the associated bluff top structures, reassessment for impacts to sand supply, public access and recreation and any other relevant coastal resources impacted by the existing seawall will be required.

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May 9, 2014

W16a

Eric Stevens, Coastal Planner
California Coastal Commission
7575 Metropolitan Drive, Suite 103
San Diego, CA 92108

Re: Application Number: 6-13-0437
Applicant: Presnell/Graves LLC

Dear Eric:

Thank you for your work on this application. This letter reiterates the information presented in my 3 emails sent to you this morning, communicated on behalf of the applicant. We request the following changes to the Special Conditions as follows:

Special Condition #1

Change Soils Engineering Construction, Inc. to Terra Costa Consulting, Inc.

Special Condition #3 (last sentence)

We do not believe that the reassessment for impacts should be required for any alteration to the bluff top structure. This would be overkill requiring an expensive and time consuming process - for the applicant and the Commission - even when the proposed alterations will have no impact on coastal resources (e.g., kitchen or bathroom renovations). However, it does make sense to require reassessment if the bluff top structure is proposed to be "redeveloped" as defined in SC #5.

Additional reassessment for impacts to sand supply, public access and recreation and any other relevant coastal resources impacted by the existing seawall will be required if the existing seawall remains beyond the initial approved mitigation period and if alterations to the existing seawall or redevelopment (as defined in Special Condition 5) is proposed for the bluff top structures ~~are~~ proposed.

Special Condition #5

We object to the portion of this condition that states future development may not rely on the seawall extension. We do not expect that you be able to make this change, but wish to preserve our objection for the record. However, we propose the following change to the last sentence so that it more clearly conforms to the definition of the "redevelopment" in the recently certified LUPA:

As used in these conditions, "redeveloped" or redevelopment" consists of alterations including: (1) additions to an existing structure; (2) exterior and/or interior renovations, and/or (3) demolition of an existing bluff home or other principal structure, or portions thereof, which results in: alteration of 50 percent or more of major structural components including exterior walls, floor

**APPLICANT'S Response to:
STAFF Recommendation** 7

and roof structure, and foundation or a 50 percent increase in floor area; ~~Alterations are not additive between individual major structural components; however, changes to individual major structural components are~~ totaled cumulatively over time on or after the date of certification of the Land Use Plan, as further defined in the Solana Beach LUP, as approved by the Commission.

Special Condition #6(a) and (b)

We believe annual evaluations are overkill. Historically, these evaluations have been required every 3 years. Please change (a) and (b) to evaluations every 3 years, with reporting out to the Commission on 3 year intervals.

Special Condition #16

We believe the proposed change brings SC #16 into conformity with the City's LUP, as amended. Under the LUP, the City grants seawall permits that are valid until the property is redeveloped, the bluff home is removed, or the bluff home no longer requires protection. Given the duration of the permit, it is inconsistent to require that the Encroachment Agreement provide that the City may unilateral request removal of the seawall at any time. My understanding of the Encroachment Agreement is that it will spell out the wherefores and whatnots of seawall removal when the CDP expires per Condition SC #4.

***Encroachment Agreement.** PRIOR TO COMMENCEMENT OF CONSTRUCTION, the applicant shall submit to the Executive Director for review and approval documentation demonstrating that the applicant has executed an Encroachment Agreement with the City, recognizing that the seawall extension is located on property owned by the City and is subject to removal ~~by request of the City at any time~~ when the CDP expires. Prior to removal of the encroachment, the applicant shall submit an amendment to this CDP within 90 days proposing removal of the encroachment in its entirety and shall only remove the encroachment after the Commission issues the CDP amendment to the applicant.*

Respectfully submitted,

AXELSON & CORN, P.C.



Jon Corn

CALIFORNIA COASTAL COMMISSION

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W16a

Filed: 8/21/2013
270th Day: 5/18/2014
Staff: E.Stevens-SD
Staff Report: 5/2/2014
Hearing Date: 5/14/2014

STAFF REPORT: REGULAR CALENDAR

Application No.: 6-13-0437

Applicant: Presnell/Graves LLC.

Agent: Walter Crampton

Location: On the city-owned beach open to the public and city-owned bluff below one single family home at 249 Pacific Avenue, Solana Beach, San Diego County (APN: 263-312-10)

Project Description: Construction of an approximately 49 ft.-long, 35 ft. high, colored and textured concrete tiedback seawall extension to an existing shoreline protective device with planting and hydroseeding of the mid and upper bluff

Staff Recommendation: Approval with Conditions

SUMMARY OF STAFF RECOMMENDATION

The proposed seawall extension would be located on a city-owned beach and bluff fronting an existing single family residence in the City of Solana Beach. The bluff top residence is partially protected by an existing 35 ft.-high seawall on the city-owned beach at the toe of the bluff, which was constructed pursuant to a separate Coastal Development Permit (CDP) in 2000. The proposed project would extend the existing seawall by 49

linear ft. and install landscaping above the proposed seawall extension.

This region of the Solana Beach shoreline is heavily armored. Directly to the north of the subject site, there are 23 consecutive properties that are protected by seawalls (~0.25 mile). A portion of the shoreline fronting the subject site and the 3 homes directly to the south of the subject site is not currently protected by a seawall (249-235 Pacific Avenue). To the south of this approximately 160 ft. unprotected bluff section, there is a seawall protecting the next 5 homes.

Staff, including the Commission's coastal engineer and geologist, have evaluated the relevant project materials, have visited the site, and have determined that the existing single family residence would be in danger from erosion and bluff collapse without the construction of a seawall extension. However, the Commission's geologist has determined that a 24 ft.-long seawall extension that stops at the southern property line of 249 Pacific Avenue would provide adequate protection for the threatened bluff top property, albeit for a shorter timeframe than the proposed 49 ft. long seawall. In order to reduce or avoid the adverse impacts to coastal resources associated with shoreline protection, only the minimum amount of armoring and alteration of the natural bluff necessary to protect the subject site should be permitted. Therefore, Special Condition 1 requires that the applicant submit revised plans for a seawall extension that goes no further than the southern extent of the bluff area fronting 249 Pacific Avenue.

The Commission's geologist has also found that the new proposed seawall addition will extend the useful life of the southernmost 26 ft.-long portion of the existing seawall fronting the subject bluff top structure by at least 10 years, and perhaps 20 or more years by protecting that portion of the existing seawall from outflanking (Exhibit 2). The existing seawall was approved by the Commission with a proposed 30 year design life (1999-2029), and mitigation for impacts to sand supply impacts were calculated based on this design life. Since the new proposed seawall addition will extend the useful life of the existing seawall well beyond the previously approved design life, it will be necessary to reevaluate the impacts to public resources should the existing seawall remain beyond the initial approved mitigation period. Special Condition 3 advises the applicant and the other property owners subject to the CDP for the existing seawall that additional mitigation for any on-going impacts to coastal resources resulting from the existing seawall will be reassessed on a case-specific basis if the existing seawall remains beyond the initial period for which the previous mitigation was secured and alterations are proposed to the existing seawall or associated bluff top structures.

Policy 4.18 of the City's LUP, as approved by the Commission, requires that when an existing bluff retention device is altered or expanded, the device shall be subject to reassessment and reauthorization pursuant to Policy 4.52 of the LUP. Policy 4.52 of the City's LUP, as approved by the Commission, further requires that alteration or expansion of an existing bluff retention device shall require a new CDP and that the CDP shall only be authorized so long as the device is needed to protect an existing bluff top structure and that a new CDP can only be issued if adequate mitigation for coastal resource impacts has been provided. In this case, given the relatively small size of the proposed seawall extension compared to the existing 352-ft long seawall and the multiple applicants

involved in the original seawall permit, it is not practical to formally require that the entire existing seawall be reauthorized through a new CDP. However, the relevant portion of the existing seawall is effectively being reassessed through this application, as the applicant has demonstrated that the portion of the existing seawall below 249 Pacific Avenue is necessary to protect an existing principal structure; and, as conditioned, reassessment will be required if the existing seawall portion fronting 249 Pacific remains beyond the initial approved mitigation period. However, in the future, expansion or alteration of the existing 352 ft. long seawall or any significant alteration or improvement to the associated bluff top structures would provide an opportunity to consolidate the CDP for the original seawall with the subject permit for the 50 ft.-long portion of the wall fronting 249 Pacific Avenue.

Staff is recommending that the proposed seawall extension only be approved so long as the armoring is still required to protect the existing endangered residence the armoring is required to protect; and requires the applicant to submit a complete coastal development permit application to remove or modify the terms of authorization of the armoring when the existing structure warranting armoring is redeveloped, no longer present, or no longer requires armoring. Furthermore, staff is requiring a maintenance and monitoring program, restrictions on future development, and other related conditions to address coastal resource impacts and issues for the proposed seawall extension.

The applicant has proposed to make a contribution to the mitigation program that would address the sand volume impacts from denial of sand to the littoral cell. Over the course of the 20 year sand supply mitigation period, the proposed seawall extension results in the retention of about 348 cubic yards of beach quality sand. At an estimated sand cost of \$16.29 per cubic yard (provided by the applicant, and based on three estimates from local contractors); this sand would have a value of \$5,668.92 (Exhibit 8). The beach area itself and degradation of public access to and along the beach that would be impacted due to encroachment (60 sq. ft.) and passive erosion (7.2 sq. ft. per year) will be mitigated through the City's interim in-lieu deposit fee, which requires the applicant to pay an interim deposit fee of \$24,000 pursuant to Special Condition 3.

The initial sand supply mitigation period for the proposed seawall addition is 20 years, and the applicant has agreed to make a deposit in the interim public access and recreation account until a public access and recreation fee program can be approved by the Commission. However, if the approved seawall extension remains in place after 20 years because it continues to be necessary to protect the existing endangered structure, additional mitigation will be required. Therefore, Special Condition 4 requires that prior to the completion of the initial 20-year mitigation period, the applicant must obtain a CDP amendment to assess the continued impacts on public access and sand supply as a result of the shoreline armoring built on the publicly-owned beach and bluff.

The proposed shoreline armoring is within the Commission's coastal development permit jurisdiction. The Commission recently certified the City's Land Use Plan (LUP); however, the City of Solana Beach does not yet have a certified Implementation Plan. Therefore, the Chapter 3 policies of the Coastal Act are the standard of review, with the City's LUP used as guidance.

6-13-0437 (Presnell/Graves LLC.)

Commission staff recommends **approval** of Coastal Development Permit #6-13-0437 as conditioned.

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APPENDICES

Appendix A – Substantive File Documents

Appendix B – Site History of Properties to the South of the Subject Site

EXHIBITS

Exhibit 1 – Project Location

Exhibit 2 – Site Plan

Exhibit 3 – Profile

Exhibit 4 – Revised Final Plan Condition 1a - Site Plan

Exhibit 5 – Revised Final Plan Condition 1a - Profile

Exhibit 6 – Site Photo 1

Exhibit 7 – Site Photo 2

Exhibit 8 – Sand Mitigation Calculations (24 ft.-Long Extension)

Exhibit 9 – CDP 6-96-021 – Ratkowski Special Conditions

Exhibit 10 – CDP 6-99-100 – Presnell et. al. Special Conditions

Exhibit 11 – Memorandum from Commission Geologist

I. MOTION AND RESOLUTION

Motion:

*I move that the Commission **approve** Coastal Development Permit Application No. 6-13-0437 subject to the conditions set forth in the staff recommendation.*

Staff recommends a **YES** vote on the foregoing motion. Passage of this motion will result in conditional approval of the permit and adoption of the following resolution and findings. The motion passes only by affirmative vote of a majority of the Commissioners present.

Resolution:

The Commission hereby approves coastal development permit 6-13-0437 and adopts the findings set forth below on grounds that the development as conditioned will be in conformity with the policies of Chapter 3 of the Coastal Act and will not prejudice the ability of the local government having jurisdiction over the area to prepare a Local Coastal Program conforming to the provisions of Chapter 3. Approval of the permit complies with the California Environmental Quality Act because either 1) feasible mitigation measures and/or alternatives have been incorporated to substantially lessen any significant adverse effects of the development on the environment, or 2) there are no further feasible mitigation measures or alternatives that would substantially lessen any significant adverse impacts of the development on the environment.

II. STANDARD CONDITIONS

This permit is granted subject to the following standard conditions:

1. **Notice of Receipt and Acknowledgment.** The permit is not valid and development shall not commence until a copy of the permit, signed by the permittee or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.
2. **Expiration.** If development has not commenced, the permit will expire two years from the date on which the Commission voted on the application. Development shall be pursued in a diligent manner and completed in a reasonable period of time. Application for extension of the permit must be made prior to the expiration date.
3. **Interpretation.** Any questions of intent of interpretation of any condition will be resolved by the Executive Director or the Commission.

4. **Assignment.** The permit may be assigned to any qualified person, provided assignee files with the Commission an affidavit accepting all terms and conditions of the permit.
5. **Terms and Conditions Run with the Land.** These terms and conditions shall be perpetual, and it is the intention of the Commission and the permittee to bind all future owners and possessors of the subject property to the terms and conditions.

III. SPECIAL CONDITIONS

This permit is granted subject to the following special conditions:

1. **Revised Final Plans.** PRIOR TO ISSUANCE OF THIS COASTAL DEVELOPMENT PERMIT, the applicant shall submit for review and written approval of the Executive Director, final plans for the seawall extension that are in substantial conformance with the submitted plans dated June 13, 2013 by Soil Engineering Construction, Inc. The plans shall first be approved by the City of Solana Beach and be revised to include the following:
 - a. The proposed seawall extension shall extend no further than the bluff area fronting 249 Pacific Avenue (approximately 24 ft. south of the existing seawall) as specifically detailed and shown by the dashed blue line shown on Exhibits 4 and 5.
 - b. Sufficient detail regarding the construction method and technology utilized for texturing and coloring the seawall, and the concrete backfill behind the seawall extension. Said plans shall confirm, and be of sufficient detail to verify, that the seawall and limited concrete backfill closely matches the adjacent color and texture of the natural bluffs, including provision of a color board for the material.
 - c. Any existing permanent irrigation system located on the subject property shall be removed or capped.
 - d. Existing accessory improvements (i.e., decks, patios, walls, windscreens, etc.) located in the geologic setback area at 249 Pacific Avenue shall be detailed and drawn to scale on the final approved site plan and shall include measurements of the distance between the accessory improvements and the natural bluff edge (as defined by Title 14 California Code of Regulations, Section 13577) taken at 3 or more locations. The locations for these measurements shall be identified through permanent markers, benchmarks, survey position, written description, or other method that enables accurate determination of the location of all structures on the site. The plans shall indicate that the existing accessory improvements are not entitled to protection from the proposed seawall extension. Any existing accessory structures located within 5 ft. of the bluff edge, if removed, shall not be replaced in a location closer than 5 feet landward of the natural bluff edge.

Any new Plexiglas or other glass wall shall be non-clear, tinted, frosted or incorporate other elements to inhibit bird strikes.

The permittee shall undertake the development in accordance with the approved plans. Any proposed changes to the approved plans shall be reported to the Executive Director. No changes to the plans shall occur without a Coastal Commission approved amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.

2. **Final Landscape Plans.** PRIOR TO ISSUANCE OF THIS COASTAL DEVELOPMENT PERMIT, the applicant shall submit for review and written approval of the Executive Director, final landscape plans for the landscaping on the coastal bluff that are in substantial conformance with the submitted plans dated June 10, 2013 by David Reed Landscape Architects.

The permittee shall undertake the development in accordance with the approved plans. Any proposed changes to the approved plans shall be reported to the Executive Director. No changes to the plans shall occur without a Coastal Commission approved amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.

3. **Mitigation for Impacts to Public Access and Recreation and Sand Supply.**

- a. PRIOR TO ISSUANCE OF THIS COASTAL DEVELOPMENT PERMIT, the applicant shall provide evidence, in a form and content acceptable to the Executive Director, that the full interim mitigation fee deposit of \$24,000, required to address adverse impacts to public access and recreational use, has been deposited in a Shoreline Account established by the City of Solana Beach.

Within 180 days of the Commission's certification of a final Public Access and Recreation Mitigation Fee Program as part of the City's LCP, the applicant shall submit to the Executive Director for review and written approval, documentation of the final mitigation fee amount required by the City to address impacts of the proposed shoreline protection on public access and recreation. If the amount differs from the interim amount required above, then the applicant shall submit an application for an amendment to this permit to adjust the mitigation fee to be paid to the City to address adverse impacts to public access and recreational use resulting from the proposed development.

- b. PRIOR TO ISSUANCE OF THIS COASTAL DEVELOPMENT PERMIT, the applicant shall provide evidence, in a form and content acceptable to the Executive Director, that a fee of \$5,668.92 has been deposited in an interest bearing account designated by the Executive Director, in-lieu of providing the total amount of sand to replace the sand that will be lost due to the impacts of the seawall extension for the an initial 20 year period beginning on the building permit completion certification date. All interest earned by the account shall be payable to the account for the purposes stated below.

The purpose of the account shall be to establish a beach sand replenishment fund to aid San Diego Association of Governments (SANDAG), or an alternate entity approved by the Executive Director, in the restoration of the beaches within San Diego County. The funds shall be used solely to pay for sand used to implement projects which provide sand to the region's beaches, not to fund operations, maintenance or planning studies. The funds shall be released only upon approval of an appropriate project by the Executive Director of the Coastal Commission. The funds shall be released as provided for in an MOA between SANDAG, or an alternate entity approved by the Executive Director, and the Commission, setting forth terms and conditions to assure that the in-lieu fee will be expended in the manner intended by the Commission. If the MOA is terminated, the Executive Director may appoint an alternate entity to administer the fund for the purpose of restoring beaches within San Diego County.

- c. The shoreline armoring approved by this CDP results in the extension of the useful life of the 26 ft.-long portion of the existing seawall fronting the bluff top home at 249 Pacific Avenue (approved pursuant to CDP #6-99-100/Presnell et. al.). Pursuant to the CDP #6-99-100, the applicant previously provided mitigation for the impacts of the existing seawall for a 30-year period (1999-2029). Additional reassessment for impacts to sand supply, public access and recreation and any other relevant coastal resources impacted by the existing seawall will be required if the existing seawall remains beyond the initial approved mitigation period and if alterations to the existing seawall or bluff top structures are proposed.

4. Duration of Armoring Approval.

- a. Authorization Expiration. This CDP authorizes the seawall extension until the time when the currently existing bluff top structure requiring protection is redeveloped as that term is defined in Special Condition 5, is no longer present, or no longer requires a protective device, whichever occurs first. Prior to the anticipated expiration of the permit and/or in conjunction with redevelopment of the property, the Permittee shall apply for a new CDP to remove the seawall extension or to modify the terms of its authorization.
- b. Modifications. If, during the term of this authorization, the Permittee desires to expand or alter the seawall extension, the Permittee shall apply for an amendment to this CDP or a new CDP, if legally required. Additional mitigation requirements for the impacts of the enlarged or reconstructed armoring on public views, public recreational access, shoreline processes, and all other affected coastal resources that have not already been mitigated through this permit will be addressed and required at that time.
- c. Amendment. If the Permittee intends to keep the seawall extension in place beyond the initial 20 year mitigation period (beginning on the building permit completion certification date), the Permittee must submit a complete CDP

amendment prior to the expiration of the 20 year mitigation term proposing mitigation for the coastal resource impacts associated with the retention of the seawall extension beyond 20 years and shall include consideration of alternative feasible measures in which the permittee can modify the coastal structure to lessen the seawall extension's impacts on coastal resources. As detailed in Special Condition 6e, monitoring reports are required every 5 years to determine if the seawall extension is still required to protect the bluff top structure in the future.

5. **Future Development.** No future development, which is not otherwise exempt from coastal development permit requirements, or redevelopment of the existing structure on the bluff top portion of the applicant's property, shall rely on the permitted seawall extension to establish geologic stability or protection from hazards. Such future development and redevelopment on the site shall be sited and designed to be safe without reliance on shoreline armoring. As used in these conditions, "redeveloped" or "redevelopment" consists of alterations including: (1) additions to an existing structure; (2) exterior and/or interior renovations, and/or; (3) demolition of an existing bluff home or other principal structure, or portions thereof, which results in alteration of 50 percent or more of major structural components including exterior walls, floor and roof structure, and foundation or a 50 percent increase in floor area, totaled cumulatively over time on or after the date of certification of the Land Use Plan, as further defined in the Solana Beach LUP, as approved by the Commission.
6. **Monitoring and Reporting Program.** PRIOR TO ISSUANCE OF THIS COASTAL DEVELOPMENT PERMIT, the applicant shall submit to the Executive Director for review and written approval, a monitoring program prepared by a licensed civil engineer or geotechnical engineer to monitor the performance of the seawall extension which requires the following:
 - a. An annual evaluation of the condition and performance of the seawall extension addressing whether any significant weathering or damage has occurred that would adversely impact the future performance of the structure. This evaluation shall also include an assessment of the color and texture of the structure compared to the surrounding native bluffs.
 - b. Annual measurements of any differential retreat of bluff material between the face of the natural bluff and the seawall face, at the north and south ends of the seawall and at 20-foot intervals (maximum) along the top of the seawall face/bluff face intersection. The program shall describe the method by which such measurements shall be taken.

Provisions for submittal of a report to the Executive Director of the Coastal Commission by May 1 of each year (beginning the first year after construction of the project is completed) for a period of three years and then, each third year following the last annual report, for the 20 years for which this seawall is

approved. In addition, reports shall be submitted in the spring immediately following either:

1. An “El Niño” storm event – comparable to or greater than a 20-year storm.
2. An earthquake of magnitude 5.5 or greater with an epicenter in San Diego County.

Thus, reports may be submitted more frequently depending on the occurrence of the above events in any given year.

- c. Each report shall be prepared by a licensed civil engineer, geotechnical engineer or geologist. The report shall contain the measurements and evaluation required in sections a and b above. The report shall also summarize all measurements and analyze trends such as erosion of the bluffs, changes in sea level, the stability of the overall bluff face, including the upper bluff area, and the impact of the structure on the bluffs to either side of the wall. In addition, each report shall contain recommendations, if any, for necessary maintenance, repair, changes or modifications to the seawall.
- d. An agreement that, if after inspection or in the event the report required in subsection c above recommends any necessary maintenance, repair, changes or modifications to the project including maintenance of the color of the structure to ensure a continued match with the surrounding native bluffs, the permittee shall contact the Executive Director to determine whether a coastal development permit or an amendment to this permit is legally required, and, if required, shall subsequently apply for a coastal development permit or permit amendment for the required maintenance within 90 days of the report or discovery of the problem.
- e. Additional monitoring reports to the City and Coastal Commission shall be required every five years from the date of CDP issuance until CDP expiration (as detailed in Special Condition 4), which evaluate whether or not the seawall extension is still required to protect the existing structure it was designed to protect. The permittee is required to submit a CDP application to remove the authorized coastal structure within six months of a determination that the coastal structure is no longer required to protect the existing structure it was designed to protect.

The applicant shall undertake monitoring and reporting in accordance with the approved final monitoring and reporting program. Any proposed changes to the approved final monitoring and reporting program shall be reported to the Executive Director. No changes to the approved final monitoring and reporting program shall occur without a Coastal Commission approved amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.

7. **Storage and Staging Areas/Access Corridors.** PRIOR TO ISSUANCE OF THIS COASTAL DEVELOPMENT PERMIT, the applicant shall submit to the Executive Director for review and written approval, final plans indicating the location of access corridors to the construction site and staging areas. The final plans shall indicate that:
- a. No overnight storage of equipment or materials shall occur on sandy beach or at the Fletcher Cove Parking Lot, and the use of other public parking spaces shall be minimized. During the construction stages of the project, the permittee shall not store any construction materials or waste where it will be or could potentially be subject to wave erosion and dispersion. In addition, no machinery shall be placed, stored or otherwise located in the intertidal zone at any time, except for the minimum necessary to construct the seacave/notch infills. Construction equipment shall not be washed on the beach or in the Fletcher Cove parking lot.
 - b. Access corridors shall be located in a manner that has the least impact on public access to and along the shoreline.
 - c. No work shall occur on the beach on weekends, holidays or between Memorial Day weekend and Labor Day of any year.
 - d. The applicant shall submit evidence that the approved plans and plan notes have been incorporated into construction bid documents. The applicant shall remove all construction materials/equipment from the staging site and restore the staging site to its prior-to-construction condition immediately following completion of the development.

The permittee shall undertake the development in accordance with the approved final plans. Any proposed changes to the approved final plans shall be reported to the Executive Director. No changes to the final plans shall occur without a Coastal Commission approved amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.

8. **Water Quality--Best Management Practices.** PRIOR TO ISSUANCE OF THIS COASTAL DEVELOPMENT PERMIT, the applicant shall submit for review and written approval of the Executive Director, a Best Management Plan that effectively assures no construction byproduct will be allowed onto the sandy beach and/or allowed to enter into coastal waters. All construction byproduct shall be properly collected and disposed of off-site.

The applicant shall undertake the development in accordance with the approved plan. Any proposed changes to the approved Plan shall be reported to the Executive Director. No changes to the plan shall occur without a Coastal Commission approved amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.

9. **Storm Design.** PRIOR TO ISSUANCE OF THIS COASTAL DEVELOPMENT PERMIT, the applicant shall submit to the Executive Director, for review and approval, certification by a registered civil engineer that the proposed shoreline protective device has been designed to withstand storms comparable to the winter storms of 1982-83 that took place in San Diego County.
10. **Other Permits.** PRIOR TO COMMENCEMENT OF CONSTRUCTION, the permittee shall provide to the Executive Director copies of all other required local, state or federal discretionary permits, for the development authorized by CDP 6-13-0437. The applicant shall inform the Executive Director of any changes to the project required by other local, state or federal agencies. Such changes shall not be incorporated into the project until the applicant obtains a Commission amendment to this permit, unless the Executive Director determines that no amendment is legally required.
11. **State Lands Commission Approval.** PRIOR TO COMMENCEMENT OF CONSTRUCTION, the applicant shall submit to the Executive Director for review and written approval, a written determination from the State Lands Commission that:
 - a. No state lands are involved in the development; or
 - b. State lands are involved in the development, and all permits required by the State Lands Commission have been obtained; or
 - c. State lands may be involved in the development, but pending a final determination of state lands involvement, an agreement has been made by the applicant with the State Lands Commission for the project to proceed without prejudice to the determination.
12. **Construction Site Documents & Construction Coordinator.** DURING ALL CONSTRUCTION:
 - a. Copies of the signed coastal development permit and the approved Construction Plan shall be maintained in a conspicuous location at the construction job site at all times, and such copies shall be available for public review on request. All persons involved with the construction shall be briefed on the content and meaning of the coastal development permit and the approved Construction Plan, and the public review requirements applicable to them, prior to commencement of construction.
 - b. A construction coordinator shall be designated to be contacted during construction should questions arise regarding the construction (in case of both regular inquiries and emergencies), and the coordinator's contact information (i.e., address, phone numbers, etc.) including, at a minimum, a telephone number that will be made available 24 hours a day for the duration of construction, shall be conspicuously posted at the job site where such contact

information is readily visible from public viewing areas, along with an indication that the construction coordinator should be contacted in the case of questions regarding the construction (in case of both regular inquiries and emergencies). The construction coordinator shall record the name, phone number, and nature of all complaints received regarding the construction, and shall investigate complaints and take remedial action, if necessary, within 24 hours of receipt of the complaint or inquiry.

13. **As-Built Plans.** WITHIN 60 DAYS OF COMPLETION OF CONSTRUCTION, or within such additional time as the Executive Director may grant for good cause, the Permittee shall submit two copies of As-Built Plans, approved by the City of Solana Beach, showing all development completed pursuant to this coastal development permit; all property lines; and all residential development inland of the structure. The As-Built Plans shall be substantially consistent with the approved revised project plans described in Special Condition 1 above, including providing for all of the same requirements specified in those plans, and shall account for all of the parameters of Special Condition 6 (Monitoring and Reporting). The As-Built Plans shall include a graphic scale and all elevation(s) shall be described in relation to National Geodetic Vertical Datum (NGVD). The As-Built Plans shall include color photographs (in hard copy and jpg format) that clearly show all components of the as-built project, and that are accompanied by a site plan that notes the location of each photographic viewpoint and the date and time of each photograph. At a minimum, the photographs shall be from representative viewpoints from the beaches located directly upcoast, downcoast, and seaward of the project site. The As-Built Plans shall be submitted with certification by a licensed civil engineer with experience in coastal structures and processes, acceptable to the Executive Director, verifying that the shoreline armoring has been constructed in conformance with the approved final plans.
14. **Public Rights.** The Coastal Commission's approval of this permit shall not constitute a waiver of any public rights that exist or may exist on the property. By acceptance of this permit, the applicant acknowledges, on behalf of himself/herself and his/her successors in interest, that issuance of the permit and construction of the permitted development shall not constitute a waiver of any public rights which may exist on the property.
15. **Assumption of Risk, Waiver of Liability and Indemnity.** By acceptance of this permit, the applicant acknowledges and agrees (i) that the site may be subject to hazards from erosion and coastal bluff collapse (ii) to assume the risks to the applicant and the property that is the subject of this permit of injury and damage from such hazards in connection with this permitted development; (iii) to unconditionally waive any claim of damage or liability against the Commission, its officers, agents, and employees for injury or damage from such hazards; and (iv) to indemnify and hold harmless the Commission, its officers, agents, and employees with respect to the Commission's approval of the project against any and all liability, claims, demands, damages, costs (including costs and fees incurred in

defense of such claims), expenses, and amounts paid in settlement arising from any injury or damage due to such hazards.

16. **Encroachment Agreement.** PRIOR TO COMMENCEMENT OF CONSTRUCTION, the applicant shall submit to the Executive Director for review and approval documentation demonstrating that the applicant has executed an Encroachment Agreement with the City, recognizing that the seawall extension is located on property owned by the City and is subject to removal by request of the City at any time. Prior to removal of the encroachment, the applicant shall submit an amendment to this CDP within 90 days proposing removal of the encroachment in its entirety and shall only remove the encroachment after the Commission issues the CDP amendment to the applicant.
17. **Deed Restriction.** PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT (CDP #6-13-0437), the applicant shall submit to the Executive Director, for review and approval, documentation demonstrating that the applicant has executed and recorded against its property (249 Pacific Avenue, Solana Beach) a deed restriction, in a form and content acceptable to the Executive Director: (1) indicating that, pursuant to this permit, the California Coastal Commission has authorized development to benefit the applicant's property, subject to terms and conditions that restrict the use and enjoyment of that property; and (2) imposing the Special Conditions of this permit as covenants, conditions and restrictions on the use and enjoyment of the Property. The deed restriction shall include a legal description of the applicant's entire parcel and a corresponding graphic depiction. The deed restriction shall also indicate that, in the event of an extinguishment or termination of the deed restriction for any reason, the terms and conditions of this permit shall continue to restrict the use and enjoyment of the applicant's property so long as either this permit or the development it authorizes, or any part, modification, or amendment thereof, remains in existence on or with respect to the subject property.
18. **CDP Consolidation.** Various circumstances in the future, including but not limited to expansion or alteration of all or any part of the existing 352 ft. long bluff retention device (CDP 6-99-100) or any significant alteration or improvement to the existing bluff top structure, may provide the opportunity to consolidate the multiple coastal development permits for the shoreline armoring fronting 249 Pacific Avenue (24 ft.-long extension and the 26 ft.-long portion of the existing seawall) into one Coastal Development Permit. Consolidation would allow for uniform conditions of approval for the entire 50 ft.-long portion of the shoreline armoring fronting 249 Pacific Avenue.

IV. FINDINGS AND DECLARATIONS

A. PROJECT DESCRIPTION/SITE HISTORY

Project Description

The proposed development involves the construction of a 49-foot long, 35-foot high extension to an existing lower coastal bluff seawall on the beach and bluff fronting 249 Pacific Avenue and partially fronting 245 Pacific Avenue in the City of Solana Beach. The proposed extension will connect to an existing 352 ft. long seawall to the north (Ref: CDP 6-99-100/Presnell et. al.). In addition, the applicant is proposing to install native landscaping on the unvegetated portions of the mid and upper bluff, with the use of hydroseeding and container plants (Exhibits 2-3). The subject development would be located on city-owned beach open to the public and the city-owned bluff face of an 87 ft.-high coastal bluff fronting an existing single family residence. Fletcher Cove, the City's central beach access park, is located approximately 1,000 ft. to the south of the subject site (Exhibit 1).

The applicant originally proposed a 74 ft. long seawall extension on the subject site that would have resulted in a seawall fronting the entire length of the properties at 249 and 245 Pacific Avenue and was proposed to protect both bluff top homes (Ref: CDP #6-12-050/Presnell, Graves, & Jokipii). However, a seawall constructed to protect the portions of the home within the 40 ft. setback area (area 40 landward of the bluff edge) at 245 Pacific would have been inconsistent with a prior Commission approval for the construction of a new home at 245 Pacific Avenue in 1996 (Ref: CDP #6-96-021/Ratkowski). When the home at 245 Pacific Avenue was approved by the Commission, two options were provided to the landowner. The first option was to set the home back 40 feet from the bluff edge in a location that would have a higher likelihood to be safe for 75 years from bluff erosion. The second option was to set the home a minimum of 25 feet back from the bluff edge and waive all rights to construct any upper or lower bluff stabilization devices (other than filling of seacaves) to protect any portion of the residence located within the 40 ft. blufftop setback area, to utilize a foundation design that could be removed in the event of endangerment, and to record a deed restriction acknowledging that the portion of the home located closer than 40 ft. from the bluff edge would be removed if the bluff edge receded to within 10 ft. of the structure and that portion of the home was considered unsafe for occupancy. The applicant chose the second option and sited the home 25 feet back from the bluff edge. Thus, the Commission allowed the applicant to assume the risk of siting the home closer to the bluff edge, as long as the applicant agreed to waive the right to shoreline protection to protect the seaward portion of the home and to remove that portion of the home if it became unsafe for occupancy (Ref: Special Conditions of 6-96-021 in Exhibit 9).

The Commission's geologist determined that the geotechnical documentation submitted with the previous application to protect both homes with a 74 ft. long seawall extension showed that there was a very low probability that the portion of the home at 245 Pacific Avenue located 40 feet from the bluff edge was imminently threatened by erosion, as the most likely failure plane was approximately 7-8 ft. from the bluff edge. Based on this determination, Commission staff requested that the applicant provide an analysis of removing the portions of the home at 245 Pacific Avenue located seaward of the 40 ft. bluff setback and to provide alternative geotechnical analysis showing that the portion of the home at 245 Pacific Avenue located landward of 40 ft. from the bluff edge was in

imminent danger, as required by the conditions of approval of the residence. The applicant subsequently withdrew the application and submitted the current application for a 49 ft. long seawall extension. The proposed 49 ft. long extension would cover the remaining ~24 ft. of natural bluff fronting 249 Pacific Avenue and only ~25 ft. of natural bluff fronting 245 Pacific Avenue.

Site History (249 Pacific Avenue)

- The existing single family bluff top home was constructed in 1958 and its seaward extent is currently located approximately 22 ft. from the bluff edge.
- In 1999, the Commission approved the construction of a 352-foot long, 35-foot high, 2 ½ foot thick, colored and textured shotcrete tied-back seawall along the base of a coastal bluff below eight single-family residences (249-311 Pacific Avenue), and construction of an approximately 70-foot wide geogrid reinforced slope along the upper bluff at the site of a bluff collapse below 261 Pacific Avenue. The southern end of this seawall covers approximately 26 linear feet (of the total 50 linear feet) of the beach and bluff fronting 249 Pacific Avenue (CDP #6-99-100/Presnell et. al.) (Exhibit 10).¹
- In 2001, the Commission denied a request to fill an approximately 70-foot long stretch of notch/undercut area at the base of a coastal bluff on public beach below 245 and 249 Pacific Avenue with a colored and textured erodible concrete mixture. Fill was proposed to be a maximum of 17 feet high and a maximum 8 feet deep. The Commission denied the application because the proposed notch infill was proposed as a preemptive protection measure and the fill was not required to protect the existing structures at the top of the bluff and would result in inconsistencies with Chapter 3 policies of the Coastal Act related to alteration of natural landforms along bluffs and cliffs, public access and visual resources (CDP #6-00-035/Presnell & Ratkowski).
- In 2005, the Commission approved maintenance of the existing 352 foot long tied-back seawall at the base of a coastal bluff below the eight single-family residential properties by re-application of sacrificial concrete cover to the lower 11 feet of the wall and infilling a notch behind the southern end of the seawall with erodible concrete, and removal of existing post and board debris and hydroseeding on upper bluff below two residences (below 269 and 301 Pacific Avenue). The infilled notch was located behind the southern end of the seawall on the beach and bluff fronting 249 Pacific Avenue and did not extend beyond the linear extent of the existing seawall, except for a couple of feet tapering the fill

¹ In a letter to CCC staff dated 10/19/2012, the applicant's engineer states that the 352 ft.-long seawall only covered part of 249 Pacific Avenue because it "...represented the minimum necessary project limits corresponding to the actual amount of exposed clean sands resulting from a 352-foot failure of the sea cliff in early 1998, undermining and exposing the overlying clean sands that existed at the base of the upper sloping terrace deposits..."

from the wall to the bluff. (CDP #6-05-095/Stroben et. al.). The applicant currently has a pending application with the City of Solana Beach to do similar maintenance to the 352 ft.-long seawall as what was approved in 2005 (excluding any modifications or additions to the existing notch behind the southern end of the seawall). The maintenance application has not yet been submitted to the Commission.

- In 2008, an exemption was approved by Commission staff for an interior remodel of the home, removal of one existing window, in-kind replacement of all of the existing windows and doors, and aesthetic improvements to the home's exterior. The exemption did not include the addition of any new square footage to the home (Exemption #6-08-022-X/Graves).

Site History (245 Pacific Avenue)

- In May of 1996, the Commission approved a Coastal Development Permit for the demolition of an existing 1,135 sq. ft. single-family residence and an existing 186 sq. ft. detached garage and construction of the 3,951 sq. ft. tri-level single-family residence on the bluff-top lot. The applicant chose to construct the home seaward of the 40 ft. bluff edge setback and as such, a condition of the CDP approval required that the applicant waive his right to construct shoreline armoring to protect the portion of the home closer than 40 feet from the bluff edge (CDP #6-96-021/Ratkowski) (Exhibit 10).
- The existing home is currently located approximately 22 ft. from the bluff edge and there is no shoreline armoring fronting the site.

Other Shoreline Armoring in the Surrounding Area

There is a significant amount of existing shoreline protection at and around the subject site. The bluff partially fronting the northern half of the subject site and to the north of the subject site has already been afforded protection in the form of seawalls and, in the case of the home at 261 Pacific, a geogrid-reinforcement on the face of the bluff. Approximately 110 linear ft. of bluff remains unprotected to the south of the subject site, then a similar seawall to that proposed fronts the bluff for the next five homes to the south of the unarmored bluff gap. Thus, seawalls of similar design to that proposed with this application have been constructed at the toe of the bluff to protect multiple homes to both the north and south of the subject site. The proposed seawall extension at the subject site would connect to the adjacent seawall to the north (which is already connected to multiple other seawalls). If the proposed project were approved as submitted, the interconnecting seawalls along this section of shoreline would comprise a single continuous wall greater than 1,200 feet in length (Exhibit 6 & 7).

The permit history of the other 2 homes to the south of the subject site that do not currently have shoreline armoring is detailed in Appendix B.

The Commission has certified the City's Land Use Plan (LUP). The Commission also recently approved an amendment with suggested modifications to the City's LUP that have not yet been accepted by the Solana Beach City Council. However, the City does not yet have a certified Implementation Plan. Therefore, the Chapter 3 policies of the Coastal Act are the standard of review, with the certified LUP and the amended LUP policies, as recently approved by the Commission, used as guidance.

B. GEOLOGIC CONDITIONS AND HAZARDS

As described above, the standard of review is Chapter 3 of the Coastal Act, with the City's LUP providing non-binding guidance. As such, applicable Coastal Act policies are cited in this report, as well as certain LUP policies for guidance as relevant. Some of the LUP policies cited below are shown as effectively certified in the City's LUP and some of the policies are shown as modified by a Land Use Plan amendment approved by the Commission on January 9, 2014 (but not yet formally accepted by the City).

Coastal Act Section 30235 addresses the use of shoreline protective devices:

Revetments, breakwaters, groins, harbor channels, seawalls, cliff retaining walls, and other such construction that alters natural shoreline processes shall be permitted when required to serve coastal-dependent uses or to protect existing structures or public beaches in danger from erosion, and when designed to eliminate or mitigate adverse impacts on local shoreline sand supply.

Coastal Act Section 30253 addresses the need to ensure long-term structural integrity, minimize future risk, and to avoid landform altering protective measures. Section 30253 provides, in applicable part:

New development shall do all of the following:

- (a) Minimize risks to life and property in areas of high geologic, flood, and fire hazard.*
- (b) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs...*

Coastal Act Sections 30210, 30211, 30212, 30212.5, and 30221 require that public access and use of the coast shall be maximized, that development shall not interfere with the public's right to access the coast and use of dry sand beaches, and that oceanfront land suitable for recreational activities shall be protected. As stated elsewhere in this report, the physical encroachment of a protective structure on the beach reduces the beach area available for public use and is therefore a significant adverse impact. Furthermore, when the back beach is fixed with a shoreline armoring device, passive erosion is halted and

additional public beach area can no longer be created.

Section 30210

In carrying out the requirement of Section 4 of Article X of the California Constitution, maximum access, which shall be conspicuously posted, and recreational opportunities shall be provided for all the people consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse.

Section 30211

Development shall not interfere with the public's right of access to the sea where acquired through use or legislative authorization, including, but not limited to, the use of dry sand and rocky coastal beaches to the first line of terrestrial vegetation.

Section 30212

(a) Public access from the nearest public roadway to the shoreline and along the coast shall be provided in new development projects except where: (1) It is inconsistent with public safety, military security needs, or the protection of fragile coastal resources, (2) Adequate access exists nearby, or, (3) Agriculture would be adversely affected. Dedicated accessways shall not be required to be opened to public use until a public agency or private association agrees to accept responsibility for maintenance and liability of the accessway. [...]

Section 30212.5

Wherever appropriate and feasible, public facilities, including parking areas or facilities, shall be distributed throughout an area so as to mitigate against the impacts, social and otherwise, of overcrowding or overuse by the public of any single area.

Section 30221

Oceanfront land suitable for recreational use shall be protected for recreational use and development unless present and foreseeable future demand for public or commercial recreational activities that could be accommodated on the property is already adequately provided for in the area.

In addition, the following City of Solana Beach Land Use Plan (LUP) language, provides additional guidance regarding geologic hazards and shoreline protection:

Page 13 of the Hazards and Shoreline/Bluff Development chapter states the following, in part:

The following describes the types of preferred bluff retention systems to protect the lower bluff only:

[...]

Higher Seawall/Clean Sand Lens Encapsulation (See Appendix B Figure 2)

– If the clean sand lens has been exposed, it may be necessary to build a seawall high enough [sic] cover this segment of the bluff face. This method consists of a structurally engineered seawall (with tiebacks into the sandstone) approximately 35' high to protect and encapsulate the clean sand lens at the base of the terrace deposits. The wall is required to have a textured face mimicking the existing material. If treated at this stage, the bluff retention system will minimize or prevent the need for future mid or upper bluff stabilization.

Policy 4.18: *A legally permitted bluff retention device shall not be factored into setback calculations. Expansion and/or alteration of a legally permitted bluff retention device shall include a reassessment of the need for the shoreline protective device and any modifications warranted to the protective device to eliminate or reduce any adverse impacts it has on coastal resources or public access, including but not limited to, a condition for a reassessment and reauthorization of the modified device pursuant to Policy 4.52.²*

Policy 4.22: *Where setbacks and other development standards could preclude the construction of a home the City may consider options including but not limited to reduction of the two car onsite parking space requirement to a one car onsite parking requirement or construction within five feet of the public right of way front yard setback for all stories as long as adequate architectural relief (e.g., recessed windows or doorways or building articulation) is maintained as determined by the City. The City may also consider options including a caisson foundation with a minimum 40 foot bluff top setback to meet the stability requirement and avoid alteration of the natural landform along the bluffs. A condition of the permit for any such home shall expressly require waiver of any rights to new or additional bluff retention devices which may exist and recording of said waiver on the title of the bluff property.*

Policy 4.44: *The City has adopted preferred bluff retention solutions (see Appendix B) to streamline and expedite the City permit process for bluff retention devices. The preferred bluff retention solutions are designed to meet the following goals and objectives:*

(1) Locate bluff retention devices as far landward as feasible;

² Policy shown as modified by a Land Use Plan amendment approved by the Commission on January 9, 2014 (but not yet formally accepted by the City).

- (2) Minimize alteration of the bluff face;*
- (3) Minimize visual impacts from public viewing areas;*
- (4) Minimize impacts to adjacent properties including public bluffs and beach area; and,*
- (5) Conduct annual visual inspection and maintenance as needed. [...]*

Policy 4.48: *Coastal structures shall be approved by the City only if all the following applicable findings can be made and the stated criteria satisfied. The permit shall be valid until the currently existing structure requiring protection is redeveloped (per definition of Bluff Top Redevelopment in the LUP), is no longer present, or no longer requires a protective device, whichever occurs first and subject to an encroachment/removal agreement approved by the City.*

(A) Based upon the advice and recommendation of a licensed Geotechnical or Civil Engineer, the City makes the findings set forth below.

(1) A bluff failure is imminent that would threaten a bluff home, city facility, city infrastructure, and/or other principal structure.

(2) The coastal structure is more likely than not to preclude the need for a larger coastal structure or upper bluff retention structure. Taking into consideration any applicable conditions of previous permit approvals for development at the subject site, a determination must be made based on a detailed alternatives analysis that none of the following alternatives to the coastal structure are currently feasible, including:

- A Seacave/Notch Infill;*
- A smaller coastal structure; or*
- Other remedial measures capable of protecting the bluff home, city facility, non-city-owned utilities, and/or city infrastructure, which might include or other non-beach and bluff face stabilizing measures, taking into account impacts on the near and long term integrity and appearance of the natural bluff face, and contiguous bluff properties;*

(3) The bluff property owner did not create the necessity for the coastal structure by unreasonably failing to implement generally accepted erosion and drainage control measures, such as reasonable management of surface drainage, plantings and irrigation, or by otherwise unreasonably acting or failing to act with respect to the bluff property. In determining whether or not the bluff property owner's actions were reasonable, the City shall take into account whether or not the bluff property owner acted intentionally, with or without knowledge, and shall consider all other relevant credible scientific evidence, as well as, relevant facts and circumstances.

(4) The location, size, design and operational characteristics of the proposed coastal structure will not create a significant adverse effect on adjacent public or private property, natural resources, or public use of, or access to, the beach, beyond the environmental impact typically associated with a similar coastal structure and the coastal structure is the minimum size necessary to protect the principal structure, has been designed to minimize all environmental impacts, and provides mitigation for all coastal and environmental impacts, as provided for in this LCP.

(B) The coastal structure shall meet City Design Standards, which shall include the following criteria to ensure the coastal structure will be:

(1) Constructed to resemble as closely as possible the natural color, texture and form of the adjacent bluffs;

(2) Landscaped, contoured, maintained and repaired to blend in with the existing environment;

(3) Designed so that it will serve its primary purpose of protecting the bluff home or other principal structure, provided all other requirements under the implementing ordinances are satisfied, with minimal adverse impacts to the bluff face;

(4) Reduced in size and scope, to the extent feasible, without adversely impacting the applicant's bluff property and other properties; and

(5) Placed at the most feasible landward location considering the importance of preserving the maximum amount of natural bluff and ensuring adequate bluff stability to protect the bluff home, City facility, or City infrastructure.

(C) Mitigation for the impacts to shoreline sand supply, public access and recreation and any other relevant coastal resource impacted by the coastal structure is required and shall be assessed in 20-year increments, starting with the building permit completion certification date. Property owners shall apply for a CDP amendment prior to expiration of each 20-year mitigation period, proposing mitigation for coastal resource impacts associated with retention of the coastal structure beyond the preceding 20-year mitigation period and shall include consideration of alternative feasible measures in which the permittee can modify the coastal structure to lessen the coastal structure's impacts on coastal resources. Monitoring reports to the City and the Coastal Commission shall be required every five years from the date of CDP issuance until CDP expiration, which evaluate whether or not the coastal structure is still required to protect the existing structure it was designed to protect. The permittee is required to submit a CDP application to remove the authorized coastal structure within six months of a determination

that the coastal structure is no longer required to protect the existing structure it was designed to protect.³

Policy 4.52: *All permits for bluff retention devices shall expire when the currently existing blufftop structure requiring protection is redeveloped (per definition of Bluff Top Redevelopment in the LUP), is no longer present, or no longer requires a protective device, whichever occurs first and a new CDP must be obtained. Prior to expiration of the permit, the bluff top property owner shall apply for a coastal development permit to remove, modify or retain the protective device. In addition, expansion and/or alteration of a legally permitted existing bluff retention device shall require a new CDP and be subject to the requirements of this policy.*

The CDP application shall include a re-assessment of need for the device, the need for any repair or maintenance of the device, and the potential for removal based on changed conditions. The CDP application shall include an evaluation of:

- *The age, condition and economic life of the existing principal structure;*
- *changed geologic site conditions including but not limited to, changes relative to sea level rise, implementation of a long-term, large scale sand replenishment or shoreline restoration program; and*
- *any impact to coastal resources, including but not limited to public access and recreation.*

The CDP shall include a condition requiring reassessment of the impacts of the device in 20-year mitigation periods pursuant to Policies 4.48 and 4.51.

No permit shall be issued for retention of a bluff retention device unless the City finds that the bluff retention device is still required to protect an existing principal structure in danger from erosion, that it will minimize further alteration of the natural landform of the bluff, and that adequate mitigation for coastal resource impacts, including but not limited to impacts to the public beach has been provided.⁴

Coastal Act Sections 30235 and 30253 acknowledge that seawalls, revetments, cliff retaining walls, groins and other such structural or “hard” methods designed to forestall erosion may also alter natural landforms and natural shoreline processes. Thus, with the exception of new coastal dependent uses, Section 30235 limits the construction of

³ Policy shown as modified by a Land Use Plan amendment approved by the Commission on January 9, 2014 (but not yet formally accepted by the City).

⁴ Policy shown as modified by a Land Use Plan amendment approved by the Commission on January 9, 2014 (but not yet formally accepted by the City).

shoreline protective works to those required to protect existing structures or public beaches in danger from erosion. The Coastal Act provides these limitations because, as discussed below, shoreline structures can have a variety of negative impacts on coastal resources including adverse effects on sand supply, public access, coastal views, natural landforms, and overall shoreline beach dynamics on and off site, including ultimately resulting in the loss of beach.

These Coastal Act policies are similarly reflected in the City's LUP policies, including requiring that landform alteration be minimized, and that development be set back an adequate distance as to provide stability over the project lifetime. The LUP likewise reflects Coastal Act requirements for required mitigation for impacts to public access and sand supply.

Under Coastal Act Section 30235, shoreline protective structures may be approved if: (1) there is an existing structure; (2) the existing structure is in danger from erosion; (3) shoreline construction that alters natural shoreline processes is required to protect the existing threatened structure; and (4) the required protection is designed to eliminate or mitigate the adverse impacts on shoreline sand supply. The first three questions relate to whether the proposed armoring is required to protect the existing structure in danger from erosion. The fourth question applies to mitigation for the shoreline sand supply impacts of armoring. Even where a shoreline protective device is determined to be necessary and designed in a manner protective of shoreline sand supply, the structure will often result in significant adverse impacts to beach access and recreation. The mitigation that is required to address the impacts of the proposed armoring on public beach access and recreation are addressed below in the section on Public Access and Recreation.

Existing Structure to be Protected

Under Section 30253, new development is to be designed, sited, and built to allow the natural process of erosion to occur without creating a need for a shoreline protective device. Coastal Act 30235 authorizes shoreline protection in limited circumstances for "existing" structures, such as structures that were in place prior to the effective date of the Coastal Act. Coastal zone development approved and constructed prior to the Coastal Act going into effect was not subject to Section 30253 requirements.

In this case, the single family home at the site is an existing structure for purposes of Section 30235 of the Coastal Act because it was originally permitted and built prior to November 8, 1972 (see former Public Resources Code, section 27404), thereby predating the enactment of The California Coastal Zone Conservation Act of 1972 (Prop 20).⁵

Danger from Erosion

The Coastal Act allows shoreline armoring to protect existing structures in danger from

⁵ Prop 20's effective date for coastal permitting requirements is February 1, 1973. The subject site would have been subject to Prop 20 jurisdiction because it is within 1000 yards inland of the mean high tide line. (Former Public Resources Code, section 27104)

erosion, but it does not define the term “in danger”. There is a certain amount of risk involved in maintaining development along a California coastline that is actively eroding and can be directly subject to violent storms, wave attack, flooding, earthquakes, and other hazards. These risks can be exacerbated by such factors as sea level rise and localized geography that can focus storm energy at particular stretches of coastline. As a result, some would say that all development along the immediate California coastline is in a certain amount of “danger.” The Commission evaluates the immediacy of any threat in order to make a determination as to whether an existing structure is “in danger”. While each case is evaluated based upon its own particular set of facts, the Commission has in some previous actions interpreted “in danger” to mean that an existing structure would be unsafe to occupy within the next two or three storm season cycles (generally, the next few years) if nothing were to be done (i.e., in the “no project” alternative) (Ref: CDP 2-10-039/Lands End) or within one year after the date of application (Ref: City of Solana Beach LUP).

According to the Commission’s staff geologist, the typical mechanism of sea cliff retreat along the Solana Beach shoreline involves the slow abrasion and undercutting of the Torrey Sandstone bedrock, which forms the sea cliff at the base of the bluffs, from wave action which becomes more pronounced in periods of storms, high surf and high tides. Other contributing factors to sea cliff retreat include fracturing, jointing, sea cave and overhang collapse and the lack of sand along the shoreline. When the lower sea cliff is undercut sufficiently, it commonly fails in blocks. The weaker terrace deposits are then unsupported, resulting in the collapse of the terrace deposits through circular failures. Such paired, episodic failures eventually result in a reduction in the steepness of the upper bluff, and the landward retreat of the bluff edge. Such retreat may threaten structures at the top of the slope. When failures of the upper bluff have sufficiently reduced the overall gradient of the upper bluff, a period of relative stability ensues, which persists until the lower bluff becomes sufficiently undercut to initiate a block failure once more, triggering a repetition of the entire process.

However, in the majority of the City of Solana Beach there is a “clean sands” lens located between the Torrey Sandstone and Marine Terrace deposits at approximately elevation +25 to 35 feet Mean Sea Level (MSL). This clean sands lens consists of a layer of sand with a limited amount of capillary tension and a very minor amount of cohesion, which causes the material to erode easily, making this clean sands layer, once exposed, susceptible to windblown erosion and continued sloughing as the sand dries out and loses the capillary tension that initially held the materials together. Geotechnical reports associated with developments near this site have stated that gentle sea breezes and any other perturbations, such as landing birds or vibrations from low-flying helicopters, can be sufficient triggers of small- or large-volume bluff collapses, since the loss of the clean sands eliminates the support for the overlying, slightly more cemented, terrace deposits.

The mechanism of bluff retreat that occurs in conjunction with the exposure of the clean sands layer is somewhat different than the paired, episodic failure model described above. Because of the cohesionless character of the clean sands, once they are exposed, they continue to slump on an ongoing basis as a result of very small triggers such as traffic vibrations or wind erosion. Continued sloughage results in the further exposure of more

clean sand, and ongoing upper bluff collapse. This cycle occurs so quickly (over months or days, rather than years) that the upper bluff may never achieve a stable angle of repose. Unless the base of the bluff is afforded shoreline protection and the clean sands lens is contained, additional bluff failures can further expose the layer of clean sands and result in a potential upper bluff failure and an immediate threat to the structures at the top of the bluff. Numerous geotechnical reports submitted in conjunction with seawall, seacave and notch infill projects in Solana Beach have identified the presence of this clean sands layer (ref. CDP Nos. 6-00-9/Del Mar Beach Club, 6-99-100/Presnell, et. al., 6-99-103/ Coastal Preservation Association, 6-00-66/Pierce, Monroe, 6-02-02/Gregg, Santana, 6-02-84/Scism, 6-03-33/Surfsong, 6-04-83, Cumming, Johnson, 6-05-72/Las Brisas and 6-07-134/Brehmer & Caccavo).

According to the Commission's staff geologist, the best regional estimate of historical long-term bluff retreat for Solana Beach is from a FEMA-funded study summarized in Benumof and Griggs (1999). These authors report an average long-term retreat rate ranging from 0.15 to 0.47 ft./yr. for the Solana Beach area over the period 1932 - 1994. Episodic erosion events such as sea cave or notch overhang collapses, and erosion related to severe winter storms, can lead to short-term bluff retreat rates well above the long-term average. These short-term retreat rates are inherent in the estimate of the long-term retreat rate for Solana Beach and, therefore, are included in the methodology used for the in-lieu fee sand replenishment calculations.

To encapsulate the exposure of this clean sands layer and protect the existing single-family residence at 249 Pacific Avenue, the applicant proposes to construct an approximately 49 ft.-long, 35 ft.-high seawall extension to the existing seawall and to plant the unvegetated portions of the mid bluff area above the wall with container plantings and hydroseed. With regard to the need for the seawall, a geotechnical letter from the applicant's consultant, TerraCosta Consulting Group, dated 6/14/2013 states:

"...There is an imminent risk of bluff failure that places the existing structure, its occupants and the beach-going public in grave danger. This project will effectively eliminate that risk by extending the existing seawall southerly by 49 ft. The size of the proposed project is the minimum necessary to protect the existing structure from collapse.

[...]

...In the late 1990's the previous owner participated in the permitting and construction of a 352-foot-long tied-back seawall that extends from the 311 Pacific Avenue to approximately halfway across 249 Pacific Avenue. When originally constructed, the seawall fronted and encapsulated the clean sand lens layer that was then exposed along the northerly half of 249 Pacific Avenue. However, this seawall did not protect its southerly half where the clean sands lens is now exposed and highly unstable. As a direct result, the residential structure at 249 Pacific Avenue is at great risk of damage or loss from imminent and inevitable bluff failure...

The Commission's engineer and geologist, having personally observed the site and having reviewed the applicant's geotechnical assessment of the site, concur that the residence is in danger from erosion, and thus the project meets the second test of Section 30235 of the Coastal Act.

Feasible Protection Alternatives

The third Section 30235 test that must be met is that the proposed armoring must be "required" to protect an existing structure in danger from erosion. In other words, shoreline armoring may only be permitted if it is the only feasible alternative capable of protecting an existing endangered structure.⁶ Other, less environmentally damaging alternatives typically considered include, but are not limited to: the "no project" alternative; drainage and vegetation measures on the blufftop; planned retreat, including abandonment and demolition of threatened structures; relocation of the threatened structure; a smaller coastal structure, a rip rap revetment; foundation underpinning; seacave/notch infill at the base of the bluff; chemical grouting; or combinations of each.

- **Non-Armoring Alternatives**

The "no project" alternative in this case would be to allow for the bluff to remain in a natural unaltered state. As indicated above, there is an existing structure in danger from erosion (per Coastal Act Section 30235) at this location. Continued erosion would adversely impact the foundation of the existing bluff top structure and would likely lead to an expansive upper bluff failure. Therefore, the "no-project" alternative is not by itself a feasible alternative in this case.

Improved drainage and landscaping atop the bluffs is another option that is typically considered. Appropriate drainage measures coupled with planting long-rooted native bluff species can help to stabilize some bluffs and extend the useful life of setbacks. This option can be applied as a stand-alone alternative, but it is most often applied in tandem with other measures. In this case, there is an approximately 7 ft. elevation difference between the rear yard and the street, such that the bluff top lot slopes down eastward away from the bluff edge. In addition, runoff on the rear yard concrete patio on the subject site is directed towards drains that bring the water to the street. The applicant is proposing to install landscaping on the unvegetated portions of the bluff face. These kinds of measures are appropriate adjuncts to other alternatives because they will help increase stability, and have and will continue to be applied here. However, these measures alone will not address the identified threat to the existing blufftop structure.

Relocation is another alternative that must be considered. Special Condition #7 of CDP 6-99-100/Presnell et. al., which permitted the existing seawall on the subject site, specifically requires the applicant to analyze, and implement, if feasible, relocation of all or portions of the principle structure that are threatened by bluff erosion, as an alternative

⁶ Coastal Act Section 30108 defines feasibility as follows: "Feasible" means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors.

to additional bluff or shoreline protection devices (Exhibit 10). The applicant's alternatives analysis for the subject property, dated March 3, 2014, asserts that it would not be feasible to relocate the principal bluff top structure on the subject site. The applicant provided the following rationale against the alternative of moving the existing structure or a portion of the existing structure landward from the bluff edge: First, the applicant contends that this alternative would be prohibitively expensive. Second, the applicant contends that the subject lot is too small to accommodate relocation or replacement of the structure. Third, the applicant contends that the time it would take to get approvals from the City and the Coastal Commission to relocate the existing home would be "excessive" and that in the meantime continuing bluff failure would cause significant damage to the existing home.

However, while permit processing times for development on bluff top properties can be considerable, the Commission has emergency permit measures in place to act quickly in an emergency. Second, the applicant's contention that the cost of relocating the home would create a financial hardship does not appear to be entirely accurate. Based on a review of bluff top homes in Solana Beach that are currently for sale and that have sold in the past three years, the average bluff top home value in Solana Beach is \$4,125,000⁷. Thus, even if the cost to relocate the homes was substantial, it would still likely be small relative to the value of the majority of the City's bluff top properties. In addition, the existing one-story, 1,380 sq. ft. home is approximately 56 years old; and a substantial amount of money will likely be invested in the home as it continues to age. Thus, looked at in context, the cost of relocating/rebuilding the home further inland is commensurate with the value of the structure.

The applicant did not provide an analysis of removal of a portion of the existing home or relocation of the home with a reduced footprint, such as building a two story home within five feet of the street right-of-way with a cantilevered western portion. However, the amount of available land area on the top of the bluff is fairly limited. The subject lot is 50 ft. wide and has a depth of approximately 80 ft. between the Pacific Avenue street right-of-way and the bluff edge. Solana Beach Municipal Code section 17.20.030.D.a requires a 10 ft. first story front yard setback, a 15 ft. second story front yard setback, and a 5 ft. garage front yard setback on the west side of Pacific Avenue. Side yard setbacks on bluff top lots are 5 ft. on either side. However, where setbacks and other development standards could preclude the construction of a home, Policy 4.22 of the City's certified LUP allows for a reduction of the required two car parking space requirement to one car and construction within five feet of the public right-of-way setback for all stories. In addition, the recent Land Use Plan amendment approved by the Commission in January 2014 allows for a first and second story cantilever on the west side of a bluff home (10 ft. in depth), provided that all footings and foundational support is located landward of the

⁷ Two blufftop homes are currently for sale in the City of Solana Beach. 311 Pacific Avenue and 475 Pacific Avenue have asking prices of \$2,850,000 and \$10,500,000, respectively. Four blufftop homes have sold during the past three years in the City of Solana Beach. 601 West Circle Drive sold for \$2,000,000 on 5/4/2011, 533 Pacific Avenue sold for \$4,250,000 on 8/10/2011, 529 Pacific Avenue sold for \$2,650,000 on 2/5/2014 and 141 Pacific Avenue sold for \$2,500,000 on 11/18/2013. Sale date and price information was obtained from www.redfin.com on 4/16/2014.

Geologic Setback Line⁸ or the minimum 40 ft. bluff edge setback (Ref: LCPA SOL-MAJ-1-13).

According to a past analysis done by the City, the average bluff top home size in the city is approximately 2,000 sq. ft. with an additional 400 sq. ft. garage. Thus, on the applicant's 50 ft.-wide lot, a two story average sized home would only require a foundation footprint of 800 sq. ft. (40 ft. wide by 20 ft. deep) with an additional 400 sq. ft. cantilever footprint (40 ft. wide by 10 ft. deep). Thus, on the subject lot, a new 2,000 sq. ft. two story home with an attached 400 sq. ft. garage could locate all the footings and structural support as far inland as approximately 55 ft. from the bluff edge, with the western wall of the cantilevered portion of the home located approximately 45 ft. from the bluff edge.

However, while the footprint of the new home could be located landward of the minimum 40 ft. bluff setback for new bluff top homes, it would still be located partially seaward of the Geologic Setback Line (approximately 70 ft. from the bluff edge). This same analysis applies to removal of only a portion of the existing home. In neither case would it be possible for the home's foundation to be located landward of the Geologic Setback Line. Thus, on the subject lot, the Commission concurs that there is not sufficient room to relocate/rebuild a home of an average size in Solana Beach such that the proposed seawall is not needed. However, there does appear to be enough room to relocate the home in the future with a caisson foundation such that mid and upper bluff shoreline armoring will not be required. The City's LUP allows the City to consider as an option for new structures, the use of a caisson foundation with a minimum 40 foot bluff top setback, if caissons would allow the structure to meet the stability requirement and avoid alteration of the natural landform along the bluffs, i.e., exposure of the caissons in the future. Once the lower bluff and clean sands lens is encapsulated by a seawall, it is likely that the upper bluff will be able to reach a stable angle of repose at approximately 35 degrees (as measured from the top of the seawall). At this point, the bluff may remain relatively stable for years. Therefore, under this scenario, it can reasonably be assumed that a caisson foundation located inland of the 35 degree line, will not become exposed⁹.

In summary, there do not appear to be feasible non-armoring alternatives that could protect the existing structure in danger from erosion.

- **Armoring Alternatives**

There are a variety of shoreline protection types. One common option is a riprap revetment. These structures can be relatively quickly installed and can protect the base of the bluff. However, they also require significant maintenance to ensure they continue to

⁸ The location on the bluff top where stability can be reasonably assured for the economic life of the development

⁹ It would also be feasible for the applicant to build a smaller home, perhaps equal to the size of the existing structure, which would allow for a smaller building footprint and an even greater setback from the bluff edge.

function in the approved state, leading to significant adverse resource impacts each time. Because their foundations are wide, revetments normally occupy a large area of beach. Migrating boulders can also lead to isolated impacts over time, expand the loss of beach area and cumulatively can lead to larger impacts. In addition, a revetment would only protect the lower bluff from wave action and would do nothing to encapsulate the clean sands lens or address the potential for a landslide. In addition, a revetment would not provide adequate support for the lower portion of the bluff and the home would still be threatened. Thus, a rip rap revetment would not reduce impacts to coastal resources or resolve the threat to the subject home.

A second alternative involves underpinning of the existing home. Underpinning would not stop the upper or lower bluff from continuing to erode and would result in significant adverse visual impacts similar to the exposed caissons of the home at 241 Pacific Avenue (Exhibit 7). In the Commission's previous analysis of the existing seawall partially fronting the subject home (Ref: CDP #6-99-100/Presnell), the applicant asserted that installation of 80 ft.-high piers would be required to protect the subject home, but that the construction itself of these piers would likely destabilize the bluff. Additionally, the applicant contended that even if 80-foot high piers were installed, the collapse on the site triggered by the erosion of the clean sands would continue to grow laterally, undermining the upper bluffs and eventually destabilizing adjacent bluff areas which might not currently have the clean sands lens exposed, thereby threatening additional bluff-top structures.

A third alternative is a notch infill at the base of the bluff. A notch infill would reduce the rate of erosion of the lower sandstone sea cliff, but would not provide support for the unstable upper bluff. Because the clean sand layer is exposed at the subject site, a notch infill would not prevent the ongoing sloughing of the clean sands in the upper bluff and the threat to the subject home would not be addressed.

A fourth alternative is the use of chemicals for densification of loose, compressible soils. However, the applicant's analysis states that in order to for chemical grouting to effectively "glue" the bluff sands in a stable formation, the outer 5 to 10 feet of the bluff face would have to be permeated. Chemical grouts are injected under pressure, and the applicant's engineer has stated that it would be essentially impossible to effectively contain a bluff face during pressure injection, and even controlled grouting could blow out portions of the slope face if any excess pressure buildup occurred. In addition, the process of injecting a chemical into sand under pressure 25 feet above the base of the bluff, presents a significant construction challenge and safety issue, particularly with the threat of additional collapses triggered by the process. Finally, if the chemical grouting were not effective in solidifying the *entire* clean sand layer, the undermining/collapse cycle would continue. Thus, it does not appear that the technology exists at this time to stabilize a coastal bluff with chemicals in place of a seawall.

A fifth alternative is the construction of smaller coastal structure (i.e. a smaller seawall extension). As proposed, the 35 ft. high seawall extension would not only front the entirety of the applicant's property, but would also front approximately half of the property to the south at 245 Pacific Avenue. As detailed previously, 245 Pacific Avenue

is subject to a deed restriction that does not allow for shoreline armoring to protect the portion of the existing home located closer than 40 ft. from the bluff edge. A seawall extension that only fronts the subject property would be approximately half of the size of the proposed seawall extension (24 ft. long as opposed to 49 ft. long). The applicant contends that the 49 ft.-long seawall extension is the minimum required to prevent flanking of the southern end of the proposed wall and to protect the bluff top structure at 249 Pacific Avenue.

A geotechnical letter from TerraCosta Consulting Group, dated 6/14/2013, in regards to the need for the proposed 49 ft. long seawall extension states:

“... While we acknowledge your concerns that a limited deed restriction exists for 245 Pacific Avenue, this project focuses on the very real need to protect 249 Pacific Avenue from marine erosion affecting the property, and the very serious concern over flanking from the south ultimately destabilizing the subject property. With over 60 feet of marginally stable terrace deposits atop the cliff-forming Torrey Sandstone, the typical zone of influence affected by flanking would be 50 percent of this height, or 30+ feet. Thus the risk of southerly flanking is very high and the seawall must, therefore, extend a minimum of 25 feet south of the westerly prolongation of 249 Pacific’s southern property line. This is required to prevent southerly flanking that would threaten the bluff-top structure at 249 Pacific Avenue.”

However, the Commission’s geologist has reviewed the applicant’s contention regarding the need for the 49 ft. long seawall extension versus a shorter seawall extension that only fronts the subject property and does not fully concur with the applicant’s findings. For example, the formula used by the applicant to determine the length of the extension required is not supported by references and the Commission’s geologist is not familiar with such a “typical zone of influence.”

While a 49 ft.-long seawall extension would provide protection for the residence at 249 Pacific Avenue for a longer period of time than a shorter seawall extension, the Commission’s geologist has determined that a 24 ft.-long seawall extension that stops at the southern property line of 249 Pacific Avenue would provide adequate protection for the threatened bluff top property, albeit for a shorter length of time. A memorandum by the Commission’s geologist with specific details supporting a 24-foot seawall extension is incorporated into the findings by reference and attached to this staff report as Exhibit 11. Permitting only the minimum size seawall required to protect the existing bluff top residence will minimize alteration of the natural bluff, and limit the impact the structure will have on shoreline sand supply, public access and recreation, consistent with the above-cited policies of the Coastal Act, the certified LUP, and the Commission’s previous action restricting shoreline protection at 249 Pacific Avenue.

As noted, the subject project is located within a relatively small gap of unarmored bluff between long stretches of armored coastline. The existing structures on the properties one lot south of 249 Pacific Avenue, at 235 and 241 Pacific Avenue appear to be located even closer to the bluff edge than the existing structure on the applicant’s property and

may well be in danger from erosion (Ref: Appendix B). Therefore, a comprehensive solution that addresses bluff erosion for the properties at 235 and 241 Pacific Avenue, may be appropriate. However, the construction of additional shoreline armoring at 235 and 241 Pacific Avenue has not been proposed to the Commission at this time. Thus, at this time, the policies of the Coastal Act, as a regulatory program under CEQA, require that the Commission not approve an armoring project if there are feasible alternatives that would substantially lessen a significant adverse effect that the project may have on coastal resources while also achieving the purpose of the project to adequately protect the applicant's existing structure at 249 Pacific Avenue. Therefore, Special Condition 1 requires that the applicant submit revised plans for a seawall that extends no further than the bluff area fronting 249 Pacific Avenue (Exhibits 4 & 5).

In summary, the Commission's staff geologist has determined that the existing structure at 249 Pacific Avenue is in danger from erosion. However, the proposed 49 ft.-long seawall is longer than what is required to protect the bluff top home at this site. A 24 ft.-long seawall extension will provide adequate protection from coastal erosion while minimizing significant adverse impacts on coastal resources. There are no other feasible less damaging alternatives available to address the threat to the existing residence. In the future, neighboring property owners may wish to develop a comprehensive approach to address the remainder of the unarmored bluff area. Until then, only as conditioned to limit the size of the proposed seawall to 24 feet in length can the proposed shoreline protection be found consistent with the shoreline and hazard protection policies of the Coastal Act.

Duration of Armoring Approval

At this point in time, there is no feasible alternative to the revised armoring project, as conditioned in Special Condition 1, that could both protect the endangered structure and remain consistent with all applicable provisions of the Coastal Act. Although the armoring in this case cannot be found consistent with all other applicable provisions of the Coastal Act, Coastal Act provision 30235 mandates that shoreline armoring shall be approved when required to protect existing structures if specified criteria are met.

Specifically, this armoring impedes public access to and along the shoreline, destroys beaches and related habitats and visually impairs coastal areas. The proposed seawall is located on sandy beach area that, if not for the seawall, could be available for public use. The proposed armoring is inconsistent with several Chapter 3 policies of the Coastal Act and, as detailed herein, will cause impermissible adverse impacts to coastal resources that are protected by the Coastal Act, including but not limited to substantial alteration and destruction of natural landforms inconsistent with the requirements of Sections 30251 and 30253. Additionally, although in-lieu mitigation fees can help mitigate sand supply and beach access impacts, by allowing for the purchase of comparable recreational enhancements, these impacts can never be entirely eliminated or mitigated because the existing beach cannot be maintained, new beach cannot be created, and there is no private beach available to acquire. The proposed armoring (as modified pursuant to Special Condition 1) is nevertheless being approved by the Commission, however, based on the provision of Section 30235 that instructs the

Commission to approve a shoreline protective device to protect an existing structure if specified criteria are satisfied.

In such a circumstance, the only applicable basis for the Commission to approve proposed armoring such as proposed herein, that is otherwise inconsistent with the Coastal Act, is when it is required to protect an existing structure in danger from erosion. If there was no existing structure in danger from erosion and the armoring was not required to protect it, the seawall extension would be denied. That the project satisfies the tests of Section 30235, and thereby must be authorized despite its other impacts that cannot be fully mitigated, therefore presumes the existence of a legally authorized existing structure that the armoring is required to protect.

Accordingly, one reason to limit the length of a shoreline protective device's development authorization is to ensure that the armoring is only being authorized as long as it is required to protect a legally authorized existing structure. If an applicant must seek reauthorization of the armoring before the existing structure that it was constructed to protect is demolished or redeveloped, then Section 30235 instructs the Commission to approve the shoreline protective device if it is still required to protect the existing structure in danger of erosion that it was designed to protect. However, once the existing structure that the armoring is required to protect is demolished or redeveloped, or no longer needs the armoring, then the armoring is no longer authorized by the provisions contained in Section 30235 of the Coastal Act. Accordingly, if there is no existing structure in danger from erosion, then the Commission cannot approve an otherwise inconsistent shoreline protective device relying on the provisions of Section 30235 of the Coastal Act.

Due to the age of many of the bluff top structures in Solana Beach, including the subject property (built in 1958), applications for redevelopment and additions to existing homes are reasonably foreseeable and illustrate the importance of regulating shoreline armoring in a manner that ties the authorization period to the existing structure it is designed to protect. In this way, the authorization period mirrors the language in Section 30235 because that provision allows for protective devices only if it is required to protect the existing home in danger from erosion; once the existing home is no longer there or no longer needs protection, Section 30235 does not support the continued existence of the shoreline protection.

Given the reasonably foreseeable trend of redevelopment of bluff top homes in the City, it is important to ensure that the need for shoreline armoring is evaluated when an applicant proposes an alteration to his or her home to determine if the proposed alteration triggers the end of the authorization period for any shoreline protection that is approved to protect the existing structure and requires removal of that shoreline protection. Notably, there are several coastal resource benefits that would result from the removal of shoreline armoring after the authorization period including, but not limited to, restoration of the bluff's natural visual integrity, removing the seawall's physical impediments to access, allowing the bluff material trapped behind a seawall to return to the littoral cell and potentially restoring marine habitat within the intertidal zone (if the seawall is sited or will be sited in the intertidal zone with rising sea levels).

Another reason to limit the authorization of shoreline protective devices is to ensure that the Commission can properly implement Coastal Act Section 30253 together with Section 30235. If a landowner is seeking new development on a blufftop lot, Section 30253 requires that such development be sited and designed such that it will not require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs. Sections 30235 and 30253 prohibit such armoring devices for new development and require new development to be sited and designed so that it does not require the construction of such armoring devices. These sections do not permit landowners to rely on such armoring devices when siting new structures or additions to existing structures on bluff tops and/or along shorelines. If a shoreline protective device exists in front of a lot, but is no longer required to protect the existing structure it was authorized to protect, it cannot accommodate future redevelopment of the site in the same location relying on the provisions of 30235. Otherwise, if a new structure is able to rely on shoreline armoring which is no longer required to protect an existing structure, then the new structure can be sited without a sufficient setback, perpetuating an unending reconstruction/redevelopment loop that prevents proper siting and design of new development, as required by Section 30253. By limiting the length of development authorization of a new shoreline protective device to the existing structure it is required to protect, the Commission can more effectively apply Section 30253 when new development is proposed. In this particular case, Special Condition 5 defines redevelopment as alterations, including additions, exterior or interior renovations, or demolition that results in a 50 percent or greater alteration of a major structural component (including exterior walls, floor and roof structures) or a 50 percent increase in floor area, cumulatively over time on or after certification of the City's LUP.

Therefore, given the foregoing, under Special Condition 4, this CDP expires when the currently existing blufftop structure requiring protection is redeveloped (as defined in Special Condition 5), is no longer present, or no longer requires the protective device approved under this CDP, whichever occurs first.

Special Condition 10 requires that the applicant inform the Executive Director of any changes to the project required by other agencies and Special Condition 16 requires that, prior to commencement of construction; the applicant must execute an Encroachment Agreement approved by the City (consistent with Policy 4.48 of the City's approved LUP). Pursuant to the encroachment agreement, the applicant shall recognize that the proposed seawall is located on City property and that the City may require that the seawall be removed at any time. Prior to removal of the encroachment, the applicant shall submit an amendment to this CDP within 90 days proposing removal of the encroachment in its entirety and shall only remove the encroachment after the Commission issues the CDP amendment to the applicant.

Designed to Eliminate or Mitigate Sand Supply Impacts

The fourth test of Section 30235 (previously cited) that must be met in order to allow Commission approval is that shoreline structures must be designed to eliminate or mitigate adverse impacts to local shoreline sand supply. As described in the Public

Access/Recreation and Sand Supply Mitigation findings later in the staff report, the applicant has proposed to pay a sand supply mitigation fee for the volume of sand that will be prevented from reaching the public beach and littoral cell as a result of the proposed shoreline armoring during an initial 20 year mitigation period for the shoreline armoring. The sand supply fee serves as mitigation for the sand retention impacts in this case. Thus, as conditioned, the project meets all Section 30235 tests for allowing such armoring.

Long-Term Stability, Maintenance, and Risk

Coastal Act Section 30253 requires the project to assure long-term stability and structural integrity. This is particularly challenging given the dynamic shoreline environment within which the proposed project would be located. If the shoreline armoring were damaged in the future (e.g. as a result of landsliding, wave action, storms, etc.) it could lead to a degraded public access condition by resulting in debris on the beach and/or creating a hazard to the public using the beaches or ocean.

Therefore, Special Condition 6 requires monitoring and reporting plans. The condition requires the evaluation of the condition and performance of the proposed project and overall bluff stability, including evaluating necessary maintenance, repair, changes or modifications. The applicant must verify that the proposed structure is built to sufficiently withstand storms comparable to the winter storms of 1982-83 that took place in San Diego County, and must also monitor the condition of the approved project after major storm events. Special Condition 6 also requires that the applicant provide monitoring reports every five years from the date of CDP issuance which evaluate whether the seawall extension is still required to protect the bluff top structure it was designed to protect. If it is determined that the seawall extension is no longer needed to protect the blufftop structure, the applicant must submit a CDP application within 6 months to remove the seawall extension. Such monitoring will ensure that the applicant and the Commission are aware of any damage to or weathering of the armoring and other project elements and can determine whether repairs or other actions are necessary to maintain the project in its approved state before such repairs or actions are undertaken. Future monitoring and maintenance activities must be understood in relation to clear as-built plans. Therefore, Special Condition 1, 2, and 13 of this approval require the submittal of revised final plans, final landscaping plans, and as-built plans.

The applicant is required to maintain the project in its approved state, subject to the terms and conditions identified by the special conditions. Development in dynamic shoreline environments is susceptible to damage due to such long-term and episodic processes. Past occurrences statewide have resulted in public costs (through low interest loans, grants, subsidies, direct assistance, etc.) in the millions of dollars. As a means of allowing continued development in areas subject to these hazards while avoiding placing the economic burden for damages onto the people of the State of California, applicants are regularly required to acknowledge site hazards and agree to waive any claims of liability on the part of the Commission for allowing the development to proceed. Accordingly, this approval is conditioned for the applicant to assume all risks for developing at this location (Special Condition 15).

To ensure that future property owners are properly informed regarding the terms and conditions of this approval, this approval is also conditioned for a deed restriction to be recorded against the applicant's property (Special Condition 17). This deed restriction will record the conditions of this permit as covenants, conditions and restrictions on the use and enjoyment of the property.

Seawall Extension Effect on Existing Adjacent Seawall

The useful life of the portion of the existing seawall fronting 249 Pacific Avenue will be extended as a result of the construction of the proposed seawall extension. Based on a review of the previously approved design life of the existing seawall fronting the subject site and the effect of the new proposed seawall, the Commission geologist has concluded the following in a Memorandum dated April 22, 2014 and attached to this staff report as Exhibit 11:

"...The useful life of the 26 foot-long portion of the existing seawall fronting 249 Pacific Avenue will be increased by being protected from outflanking by the extension proposed on the southern half of the property at 249 Pacific Avenue. Likewise, the useful life will be further increased, as will the proposed seawall, if a further extension is constructed on the northern half of 245 Pacific Avenue. It is not possible to quantify authoritatively the length of time that the useful life would be increased, but, based on my experience in geologically similar areas of Solana Beach, it is my opinion that it would likely be at least 10 years, and perhaps 20 or more years..."

The existing 352 ft.-long seawall partially fronting 249 Pacific Avenue, which includes the 26 ft.-long portion referenced above, was approved by the Commission in 1999 (CDP 6-99-100/Presnell et. al.). At the time that CDP 6-99-100 was approved (1999), the Commission used the same methodology as used today to calculate sand supply impacts. However, the methodology used by the Commission to calculate public access and recreation mitigation fees was based only on the estimated cost of the quantity of sand beneath a seawall and the quantity of sand beneath the area landward of the seawall that would otherwise have been provided if the seawall did not block the natural bluff retreat. Thus, a separate mitigation fee for public access and recreation impacts, which the Commission did not begin to assess in Solana Beach until 2005, was not assessed. The Commission recognized at the time that impacts on public access and recreation were not adequately mitigated. However, a program to assess and mitigate for such impacts had not yet been developed.

At the time of approval, in 1999, the applicants proposed that the seawall would have a design life of 30 years. The sand mitigation fee previously paid by the applicant was quantified by calculating the volume of sand below the immediate area of encroachment of the seawall, the volume of sand beneath the area landward of the seawall that would otherwise have been provided if the seawall did not block the natural bluff retreat for a 30 year period (1999-2029), and the amount of sand in the bluff that would not be able to reach the beach during a 30 year period (1999-2029). Special Condition 3 serves to

advise the applicant and the other 7 property owners subject to CDP #6-99-100 that reassessment for impacts to sand supply, public access and recreation and any other relevant coastal resources impacted by the existing seawall may be required if the existing seawall remains beyond the initial approved mitigation period and if alterations to the existing seawall or bluff top structures are proposed.

CDP Consolidation

LUP Policy 4.18, as approved by the Commission (and used as guidance), requires that when an existing bluff retention device is altered or expanded, the device shall be subject to reassessment and reauthorization pursuant to Policy 4.52 of the LUP. Policy 4.52 of the City's LUP, as approved by the Commission, further requires that alteration or expansion of an existing bluff retention device shall require a new CDP and that the CDP shall only be authorized so long as the device is needed to protect an existing bluff top structure and that a new CDP can only be issued if adequate mitigation for coastal resource impacts has been provided.

Because the existing seawall was approved pursuant to one CDP for eight separate applicants, all the applicants subject to the permit would need to be party to any changes to the CDP. Thus, in this particular situation, it would be difficult to formally reauthorize the existing 352 ft.-long seawall that is being expanded pursuant to the subject CDP application. Changes to the previously approved CDP would require that the CDP be amended and that each property owner amend the deed restrictions recorded pursuant to the CDP. However, the relevant portion of the existing seawall is effectively being reassessed through this application, as the Commission has determined that the portion of the existing seawall below 249 Pacific Avenue is necessary to protect an existing structure, and that additional mitigation will be required if the existing seawall remains beyond the initial approved mitigation period.

Approval of the proposed seawall extension will result in multiple, non-uniform special conditions for the 50 ft. portion of the seawall fronting 249 Pacific Avenue (24 ft.-long extension and the 26 ft.-long portion of the existing seawall). Consolidation of the multiple permits would allow for consistent conditions of approval for the entire 50 ft.-long portion of the shoreline armoring fronting 249 Pacific Avenue. Special Condition 18 advises the applicant that there are various situations that may occur in the future, including but not limited to expansion or alteration of the existing 352 ft. long seawall or any significant alteration or improvement to the existing bluff top structure, that may provide the opportunity to consolidate the multiple coastal development permits for the shoreline armoring fronting 249 Pacific Avenue into one coastal development permit. However, although the conditions on the two permits that apply to the 26-ft-long portion of the existing seawall are not identical, the intent of the approval and the special conditions of both permits is to limit the adverse impacts of the required shoreline protection on coastal resources and ensure that adequate mitigation to offset these impacts is provided.

Conclusion

The proposed seawall extension (as modified pursuant to Special Condition 1 to reduce its length to 24 ft.), can be found consistent with Coastal Act Sections 30235 and 30253 because it is required to protect an existing structure that is in danger from erosion, is the feasible alternative that would substantially lessen significant adverse effects on coastal resources and is designed to eliminate or mitigate impacts on shoreline sand supply. The sand supply in-lieu fee helps mitigate for the loss of sand to the littoral cell due to retention in this case. These fees and additional aforementioned special conditions mitigate the identified impacts to the extent feasible, consistent with the requirements of Section 30235.

C. VISUAL RESOURCES

Sections 30240, 30250 and 30251 of the Coastal Act require that the scenic and visual qualities of coastal areas be protected, that new development adjacent to park and recreation areas be sited so as to not degrade or impact the areas and that new development not significantly adversely affect coastal resources:

Section 30240

[. . .]

(b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.

Section 30250 (a)

a) New residential, commercial, or industrial development, except as otherwise provided in this division, shall be located within, contiguous with, or in close proximity to, existing developed areas able to accommodate it or, where such areas are not able to accommodate it, in other areas with adequate public services and where it will not have significant adverse effects, either individually or cumulatively, on coastal resources. In addition, land divisions, other than leases for agricultural uses, outside existing developed areas shall be permitted only where 50 percent of the usable parcels in the area have been developed and the created parcels would be no smaller than the average size of surrounding parcels.

Section 30251

The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually

compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas.

In addition, the following certified City of Solana Beach LUP language, although not the standard of review, can provide pertinent information and guidance regarding the protection of coastal zone visual resources:

Policy 4.29: *Limit buildings and structures on the sloped face and toe of the bluff to lifeguard towers, subsurface public utility drainage pipes or lines, bluff retention devices, public stairs and related public infrastructure which satisfy the criteria established in the LCP. No other permanent structures shall be permitted on a bluff face. Such structures shall be maintained so that they do not contribute to further erosion of the bluff face and are to be visually compatible with the surrounding area to the maximum extent feasible.*

Policy 4.37: *Maximize the natural, aesthetic appeal and scenic beauty of the beaches and bluffs by avoiding and minimizing the size of bluff retention devices, preserving the maximum amount of unaltered or natural bluff face, and minimizing encroachment of the bluff retention device on the beach, to the extent feasible, while ensuring that any such bluff retention device accomplishes its intended purpose of protecting existing principal structures in danger from erosion.*

Policy 4.54: *To achieve a well maintained, aesthetically pleasing, and safer shoreline, coordination among property owners regarding maintenance and repair of all bluff retention devices is strongly encouraged. This may also result in cost savings through the realization of economies of scale to achieve these goals by coordination through an assessing entity. All bluff retention devices existing as of the date of certification of the LCP, to the extent they do not conform to the requirements of the LCP, shall be deemed non-conforming. A bluff property owner may elect to conform his/her/its bluff property or bluff retention device to the LCP at any time if the City finds that an existing bluff retention device that is required to protect existing principal structures in danger from erosion is structurally unsound, is unsafe, or is materially jeopardizing contiguous private or public principal structures for which there is no other adequate and feasible solution, then the City may require reconstruction of the bluff retention device.*

Much of the bluff along the Solana Beach coastline has been armored at its base, primarily by seawalls, all of which substantially alter the appearance of the bluffs, particularly those that have not been camouflaged to replicate the of a natural bluff face. However, the technology in design of seawalls has improved dramatically over the last two decades. Seawalls now typically involve sculpted and colored concrete that upon completion closely mimic the natural surface of the lower bluff face.

The existing seawall on the subject site was designed to conform as closely as possible to the natural contours of the bluff using color and textured concrete. As proposed, the

seawall extension will match the appearance of the existing wall and the surrounding bluffs. The visual treatment proposed is similar to the visual treatment approved by the Commission in recent years for shoreline devices along the Solana Beach shoreline. (Ref. CDP 6-99-100/Presnell et. al., CDP #6-09-033/Garber et. al.).

Special Condition 1 requires that the proposed seawall extension be reduced in size from the proposed 49 feet to 24 feet long, which will reduce the bulk and scale of the proposed structure. In addition, Special Condition 6 requires the applicant to monitor and maintain the proposed extension in its approved state. Thus, the proposed structure will be maintained so as to effectively mitigate its visual prominence.

Therefore, as conditioned, the Commission finds that potential visual impacts associated with the proposed development have been reduced to the maximum extent feasible and the proposed development will include measures to prevent impacts that would significantly degrade the adjacent park and recreation area. Thus, the project is consistent with Sections 30240 and 30251 of the Coastal Act.

D. PUBLIC ACCESS/RECREATION AND SAND SUPPLY MITIGATION

Pursuant to Section 30604 (c), the Coastal Act emphasizes the need to protect public recreational opportunities and to provide public access to and along the coast. As previously referenced in the Geologic Conditions and Hazards section of this staff report, Coastal Act Sections 30210, 30211, 30212, 30212.5, and 30221 are also applicable to the proposed development and the protection of public access to the coast.

The City's LUP policies related to public access state:

Policy 4.49: *The bluff property owner shall pay for the cost of the coastal structure or Infill and pay a Sand Mitigation Fee and a Public Recreation Fee per LUP Policy 4.38. These mitigation fees are not intended to be duplicative with fees assessed by other agencies. It is anticipated the fees assessed as required by this LCP will be in conjunction with, and not duplicative of, the mitigation fees typically assessed by the CCC and the CSLC for impacts to coastal resources from shoreline protective devices.*

Sand Mitigation Fee - to mitigate for actual loss of beach quality sand which would otherwise have been deposited on the beach. For all development involving the construction of a bluff retention device, a Sand Mitigation Fee shall be collected by the City which shall be used for beach sand replenishment and/or retention purposes. The mitigation fee shall be deposited in an interest-bearing account designated by the City Manager of Solana Beach in lieu of providing sand to replace the sand that would be lost due to the impacts of any proposed protective structure. The methodology used to determine the appropriate mitigation fee has been approved by the CCC and is contained in LUP Appendix A. The funds shall solely be used to implement projects which provide sand to the City's beaches, not to fund other public operations, maintenance, or planning studies.

Sand Mitigation Fees must be expended for sand replenishment and potentially for retention projects as a first priority and may be expended for public access and public recreation improvements as secondary priorities where an analysis done by the City determines that there are no near-term, priority sand replenishment Capital Improvement Projects (CIP) identified by the City where the money could be allocated. The Sand Mitigation funds shall be released for secondary priorities only upon written approval of an appropriate project by the City Council and the Executive Director of the Coastal Commission.

Public Recreation Fee – Similar to the methodology established by the CCC for the sand mitigation fee, the City and the CCC are jointly developing a methodology for calculating a statewide public recreation fee. To assist in the effort, the City has shared the results of their draft study with the CCC to support their development of a uniform statewide Public Recreation / Land Lease Fee. Until such time as an approved methodology for determining this fee has been established, and the methodology and payment program has been incorporated into the LCP through an LCP amendment, the City will collect a \$1,000 per linear foot interim fee deposit. In the interim period, CCC will evaluate each project on a site-specific basis to determine impacts to public access and recreation, and additional mitigation may be required. The City shall complete its public recreation/land lease fee study within 18 months of effective certification of the LUP.

Project applicants have the option of proposing a public recreation/access project in lieu of payment of Public Recreation Fees (or interim deposits) to the City. At the City's discretion, these projects may be accepted if it can be demonstrated that they would provide a directly-related recreation and/or access benefit to the general public.

Public Recreation Fees must be expended for public access and public recreation improvements as a first priority and for sand replenishment and retention as secondary priorities where an analysis done by the City determines that there are no near-term, priority public recreation or public access CIP identified by the City where the money could be allocated. The Public Recreation funds shall be released for secondary priorities only upon written approval of an appropriate project by the City Council and the Executive Director of the Coastal Commission.¹⁰

Shoreline protective devices have many adverse impacts on public access and recreation. As modified in Special Condition 1, the proposed seawall extension will extend 2 ½ ft. seaward of the toe of the bluff for a length of 24 ft. The beach along this area of the coast is narrow, and at high tides and winter beach profiles, the public may be forced to walk virtually at the toe of the bluff, and at times the area could be impassable. As such, an encroachment of any amount onto the sandy beach reduces the small beach area available for public use and is therefore a significant adverse impact.

¹⁰ Policy shown as modified by a Land Use Plan amendment approved by the Commission on January 9, 2014 (but not yet formally accepted by the City).

There are three major components that the Commission has historically analyzed when determining impacts on public access.

- ***Shoreline Processes***

Beach sand material comes to the shoreline from inland areas, carried by rivers and streams; from offshore deposits, carried by waves; and from coastal dunes and bluffs, becoming beach material when the bluffs or dunes lose material due to wave attack, landslides, surface erosion, gullying, etc. Many coastal bluffs are marine terraces – ancient beaches that formed when land and sea levels differed from current conditions. Since the marine terraces were once beaches, much of the material in the terraces is often beach-quality sand or cobble, and is a valuable contribution to the littoral system when it is added to the beach. While beaches can become marine terraces over geologic time, the normal exchange of material between beaches and bluffs is for bluff erosion to provide beach material. Bluff retreat and erosion is a natural process resulting from many different factors such as erosion by wave action causing cave formation, enlargement and eventual collapse of caves, saturation of the bluff soil from groundwater causing the bluff to slough off, and natural bluff deterioration. When the back-beach or bluff is protected by a shoreline protective device, the natural exchange of material either between the beach and dune or from the bluff to the beach will be interrupted and, if the shoreline is eroding, there will be a measurable loss of material to the beach. Since sand and larger grain material are the most important components of most beaches, only the sand portion of the bluff or dune material is quantified as sandy beach material.

These natural shoreline processes affecting the formation and retention of sandy beaches can be significantly altered by the construction of shoreline armoring structures because bluff retreat is one of several ways that beach quality sand is added to the shoreline, and is also one of the critical factors associated with beach creation/retention. Bluff retreat and erosion are natural processes that result from the many different factors described above. Shoreline armoring directly impedes these natural processes.

The project site is located in Solana Beach where average annualized bluff erosion rates are best estimated at 0.15 to 0.47 feet per year (Benumof and Griggs, 1999). However, as previously indicated, this is an average annualized rate; actual erosion is more episodic, and can increase dramatically as a result of winter storm events and sections of bluff material can slough several feet at a time. This erosion rate may be re-evaluated at a future date. This sandy beach material is carried off and redistributed through wave action along the shoreline and serves to nourish the beaches.

Some of the effects of engineered armoring structures on the beach (such as scour, end effects and modification to the beach profile) are temporary or are difficult to distinguish from all the other actions that modify the shoreline. Others are more qualitative (e.g., impacts to the character of the shoreline and visual quality). Some of the effects that a shoreline structure may have on natural shoreline processes can be quantified, however, including: (1) the loss of the beach area on which the structure is located; (2) the long-term loss of beach that will result when the back-beach location is fixed on an eroding

shoreline; and (3) the amount of bluff material that would have been supplied to the littoral system if the back-beach or bluff were to erode naturally to renourish beach areas nearby with eroded bluff material.¹¹

- **Encroachment on the Beach**

Shoreline protective devices are all physical structures that occupy space. When a shoreline protective device is placed on a beach area, the underlying beach area cannot be used as beach. This generally results in the privatization of the public beach and a loss of space in the public domain such that the public can no longer access that public space. The encroachment also results in a loss of sand and/or areas from which sand generating materials can be derived. The area where the structure is placed will be altered from the time the protective device is constructed, and the extent or area occupied by the device will remain the same over time, until the structure is removed or moved from its initial location. The beach area located beneath a shoreline protective device, referred to as the encroachment area, is the area of the structure's footprint. In this case, the proposed 24 ft.-long extension would immediately cover approximately 60 sq. ft. (24 ft.-long by 2 ½ ft.-wide) of sandy beach area.

- **Fixing the back beach**

Coastal shoreline experts generally agree that where the shoreline is eroding and armoring is installed, the armoring will eventually define the boundary between the sea and the upland. On an eroding shoreline, a beach will exist between the shoreline/waterline and the bluff as long as sand is available to form a beach. As bluff erosion proceeds, the profile of the beach also retreats and the beach area migrates inland with the bluff. This process stops, however, when the backshore is fronted by a hard protective structure such as a revetment or a seawall. While the shoreline on either side of the armor continues to retreat, shoreline in front of the armor eventually stops at the armoring. This effect is also known as passive erosion. The beach area will narrow, being squeezed between the moving shoreline and the fixed backshore. Eventually, there will be no available dry beach area and the shoreline will be fixed at the base of the structure. In the case of an eroding shoreline, this represents the loss of a beach as a direct result of the armor.

In addition, sea level has been rising for many years. Also, there is a growing body of evidence that there has been an increase in global temperature and that acceleration in the rate of sea level rise can be expected to accompany this increase in temperature (some shoreline experts have indicated that sea level could rise by as much as 5.5 feet by the year 2100)¹². Mean sea level affects shoreline erosion in several ways, and an increase in

¹¹ The sand supply impact refers to the way in which the project impacts creation and maintenance of beach sand. Although this ultimately translates into beach impacts, the discussion here is focused on the first part of the equation and the way in which the proposed project would impact sand supply processes.

¹² The 2012 National Research Council's Report, *Sea Level Rise for the Coasts of California, Oregon and Washington: Past Present and Future*, is currently considered the best available science on sea-level rise for California. The NRC report predicts that for areas south of Cape Mendocino, sea level may increase between 16.56 and 65.76 inches between 2000 and 2100 (NRC, 2012).

the average sea level will exacerbate all these conditions. On the California coast the effect of a rise in sea level will be the landward migration of the intersection of the ocean with the shore, leading to a faster loss of the beach as the beach is squeezed between the landward migrating ocean and the fixed backshore.

Such passive erosion impacts can be calculated over the time. The passive erosion impacts of the seawall, or the long-term loss of beach due to fixing the back beach, is equivalent to the footprint of the bluff area that would have become beach due to erosion and is equal to the long-term average annual erosion rate multiplied by the width of property that has been fixed by a resistant shoreline protective device.¹³ In this case, the new seawall, as conditioned, would be 24 linear ft. For purposes of determining the impacts from fixing the back beach; it is assumed that new beach area would result from landward retreat of the bluff.

The area affected by passive erosion can be approximated by multiplying the 24 linear feet of bluff, which is proposed to be armored, by the annual expected erosion rate. The applicant's geotechnical consultant estimated the average bluff recession for this site at 0.3 feet per year. Every year that the proposed seawall extension is in place would result in a loss of 7.2 sq. ft. of beach that would have been created if the back beach had not been fixed by the seawall.

- **Retention of Potential Beach Material**

If natural erosion were allowed to continue (absent shoreline armoring structures), some amount of beach material would be added to the beach at this location, as well as to the larger littoral cell sand supply system fronting the bluffs. The volume of total material that would have gone into the sand supply system over the lifetime of the shoreline structure would be the volume of material between (a) the likely future bluff-face location with shoreline protection; and (b) the likely future bluff-face location without shoreline protection. Since the main concern is with the sand component of this bluff material, the total material lost must be multiplied by the percentage of bluff material which is beach sand, giving the total amount of sand that would have been supplied to the littoral system for beach deposition if the proposed device were not installed.

Mitigation Measures

When shoreline protection cannot be avoided and have been reduced to the maximum extent feasible, mitigation for any remaining adverse impacts of the development on access and public resources is required. When physical impediments adversely impact public access and create a private benefit for the property owners, the Commission has found in numerous cases (see 4-87-161/Pierce Family Trust & Morgan, 6-87-371/Van

¹³ The area of beach lost due to long-term erosion (A_w) is equal to the long-term average annual erosion rate (R) times the number of years that the back-beach or bluff will be fixed (L) times the width of the property that will be protected (W). This can be expressed by the following equation: $A_w = R \times L \times W$. The annual loss of beach area can be expressed as $A_w' = R \times W$.

Buskirk, 5-87-576/Miser and Cooper, 3-02-024/Ocean Harbor House, 6-05-72/Las Brisas, 6-07-133/Li, 6-07-134/Caccavo, 6-03-33-A5/Surfsong, 6-08-73/DiNoto, et.al, 6-08-122/Winkler, 6-09-033/Garber et. al., 6-13-025/Koman et. al.) that a public benefit must arise through mitigation conditions in order for the development to be consistent with the access policies of the Coastal Act, as stated in Sections 30210, 30211, and 30212.

The applicant has proposed to make a contribution to the SANDAG mitigation program to mitigate for shoreline sand supply impacts associated with the proposed seawall extension's retention of sand that would have contributed to the littoral cell had no seawall been built on the subject site. Over the course of the 20 year Sand Supply mitigation period, the proposed seawall extension results in the retention of about 348 cubic yards of beach quality sand¹⁴. At estimated sand cost of \$16.29 per cubic yard (provided by the applicant, and based on three estimates from local contractors); this sand would have a value of \$5,668.92 (Exhibit 8).

However, in addition to the quantitative impacts from seawalls, there are qualitative social benefits of beaches (recreational, aesthetic, habitat values, etc.). Beaches also provide significant direct and indirect revenues to local economies, the state, and the nation. The loss of sandy beach area in an urban area such as Solana Beach represents a significant impact to public access and recreation, including a loss of the social and economic value of this recreational opportunity. The question becomes how to adequately mitigate for these qualitative impacts on public recreational beach use and in particular, how to determine a reasonable value of this impact to serve as a basis for mitigation, when the impacts are on-going over time.

Prior to 2005, the Commission only addressed the then quantifiable impacts on shoreline sand supply when it approved new shoreline armoring devices in Solana Beach. However, the Commission has, at times, included findings that acknowledged that shoreline armoring devices have significant on-going adverse impacts on the beach environment which cannot be fully mitigated through a one-time sand mitigation payment. In addition, the Commission has acknowledged that impacts can change over time or become more significant as the area of beach available for public access continues to erode. The sand mitigation payment typically required by the Commission is based on a proposed design life of the shoreline armoring device, which is typically 20 to 30 years. The Commission has only required a mitigation fee for this time period because assuming the estimate of the design life is correct, after 20-30 years, either the seawall will have deteriorated to the point that it no longer has impacts on sand supply, and thus, mitigation would no longer be necessary, or if there are still existing structures in need of protection, the applicants would have to apply to replace or substantially

¹⁴ The sand mitigation calculation is based on the volume of cubic yards of beach quality sand located landward of the bluff retention device that would otherwise reach the public beach during the initial 20-year mitigation period. The volume of sand directly below the bluff retention device and the volume of sand below the area that would otherwise have been created through erosion of the bluff are not included in the sand supply mitigation formula, as mitigation for these impacts will be addressed in to the City's Public Access and Recreation Program.

renovate the shoreline protection, and any impacts associated with the new development would be reviewed on a case-by-case basis for consistency with the Coastal Act and any mitigation associated with the new development would be reassessed at that time. Thus, inherent in the Commission's sand mitigation fee is that mitigation is not being imposed for longer than the design life. Thus, should a shoreline protective device continue to have impacts beyond the estimated design life, policies of the City's LUP provide for future reassessment of shoreline armoring devices and changed circumstances to ensure all impacts are adequately mitigated.

In recent years, the Commission has sought additional ways to quantify the adverse impacts to public access and recreation that result from shoreline protective devices and, thereby, develop more appropriate mitigation for those impacts. In this case, because an established mitigation program is not in place, the applicant is proposing that the Commission make use of the methodology recently utilized for an in-lieu fee program adopted by the City of Solana Beach that addresses impacts of shoreline devices on public access and recreation.

In June of 2007, the City of Solana Beach adopted an interim in-lieu fee program to mitigate the adverse impacts associated with shoreline devices (Ref. Resolution 2007-042, City of Solana Beach). The program has been designed as "interim" until the City completes, and the Commission certifies as part of an LCP, an economic study that develops a more precise way to determine impacts to public access and recreation from shoreline armoring. As such, the City's program requires the \$1,000.00 per linear foot fee be assessed in the interim and requires an applicant to agree to modifications to the fee once the economic study is complete and certified and a more site specific fee is assessed. The monies collected through the mitigation program will be directed for City use for public access and recreational projects. The applicant has proposed payment into the City's program as mitigation for adverse impacts of the proposed development on public access and recreation.

The Commission has accepted the City of Solana Beach's interim mitigation program for numerous seawall projects (Ref. CDP Nos. 6-02-039-A1/Seascape Chateau, 6-07-134/Caccavo, 6-03-33-A5/Surfsong, 6-08-73/DiNoto, et. al., 6-08-122/Winkler, 6-09-033/Garber et. al., and 6-13-025/Koman). Each of these recent coastal development permits for seawalls were also conditioned to require the applicants to apply for an amendment to their coastal development permit within 6 months of the Commission's certification of the City's economic study in order to reassess the in-lieu mitigation fee.

As required by the certified LUP, the City's revised and updated mitigation program will address appropriate mitigation for both new applications for shoreline armoring and for existing shoreline armoring that has not fully mitigated for its impacts to coastal resources (while taking into consideration previous mitigation payments).

In the absence of a comprehensive program or method of assessing the full range of impacts to public access, recreational opportunities, and the economic loss to public access/recreation from the proposed shoreline armoring, the Commission can accept participation in the City's interim mitigation fee program as adequate mitigation until

such time that the City completes a program and the Commission has certified the City's mitigation program through an LCP amendment. Special Condition 3 requires the applicant to pay the City's interim fee deposit of \$24,000. In order to ensure that any subsequent modification of this mitigation fee is consistent with the Chapter 3 policies of the Coastal Act, Special Condition 3 also requires the applicant to submit an application for an amendment to this permit to the Commission if the final mitigation fee certified as part of the LCP is different than the proposed \$24,000 interim fee¹⁵. The Commission's acceptance, in this case, of the applicant's proposed mitigation for the loss of public access and recreational opportunities associated with the subject seawall should not be seen as Commission approval of a final mitigation plan. The appropriateness of any reduction or increase in the fee amount will be addressed by the Commission at that time to assure compliance with the Coastal Act and the City's LCP.

In addition, This stretch of beach has historically been used by the public for access and recreation purposes. Special Condition 14 acknowledges that the issuance of this permit does not waive the public rights that may exist on the property. The seawall may be located on State Lands property, and as such, Special Condition 11 requires the applicant to obtain any necessary permits or permission from the State Lands Commission to perform the work.

The use of the beach or public parking areas for staging of construction materials and equipment also adversely impacts the public's ability to gain access to the beach. Special Condition 7 prohibits the applicant from storing vehicles on the beach overnight, using any public parking spaces within the Fletcher Cove Parking Lot for staging and storage of equipment, and prohibits washing or cleaning construction equipment on the beach or in the parking lot. Special Condition 7 also prohibits construction on the sandy beach during weekends and holidays and between Memorial Day to Labor Day of any year. Special Condition 8 mandates that no construction byproduct will be allowed onto the beach or into the ocean. Special Condition 12 requires that this CDP be kept onsite at all times during construction activities and the contact information of a representative shall be posted

Conclusion

In summary, direct encroachment of the 24 ft.-long seawall extension will result in an immediate loss of 60 square feet of beach area, 7.2 sq. ft. per year of beach area will not be created annually through passive erosion due to fixing the back of the beach, and 348 cubic yards of sand will be retained behind the seawall over a 20-year period. The sand mitigation fee required in Special Condition 3 will mitigate the proposed project's adverse impacts on shoreline sand supply. The beach area and degradation of public access to and along the beach that would be impacted due to encroachment (60 sq. ft.) and passive erosion (7.2 sq. ft. per year) will be mitigated through the City's interim in-lieu deposit fee, which requires the applicant to pay an interim deposit fee of \$24,000.

¹⁵ The \$24,000 interim deposit fee was determined based on a \$1,000 per linear ft. deposit for the 24 ft.-long seawall.

The immediate loss of 60 sq. ft. of public beach and the annual loss of 7.2 additional sq. ft. each year cannot be fully offset by the required mitigation fee since the beach itself cannot be replaced. However, until a more direct form of mitigation is found, the Commission can accept the required in-lieu fee mitigation. The mitigation monies provide the City the opportunity to potentially purchase or contribute to the purchase of privately-owned beach or bluff top properties along the Solana Beach shoreline from which threatened structures could be removed along with the need for shoreline protective devices. Only with this required mitigation can the proposed development be found to be consistent with the public access and recreation policies of the Coastal Act. Furthermore, upon the Commission's future approval of the City's LCP public access/recreation fee program, the Commission will be able to more fully assess the impacts of the proposed new seawall and the extension of the useful life of the portion of the existing seawall. Thus, as conditioned, the Commission finds the project consistent with the public access and recreation policies of the Coastal Act.

E. LOCAL COASTAL PLANNING

Section 30604(a) also requires that a coastal development permit shall be issued only if the Commission finds that the permitted development will not prejudice the ability of the local government to prepare a Local Coastal Program (LCP) in conformity with the provisions of Chapter 3 of the Coastal Act. In this case, such a finding can be made.

The City's Local Coastal Program Land Use Plan was effectively certified in June 2013. In addition, the Commission recently approved an amendment to the LUP to modify some of the key provisions relating primarily to bluff top development and shoreline protection. However, the City has not yet developed implementing ordinances; thus, a complete LCP has not yet been certified.

The location of the proposed shoreline armoring is designated for Open Space Recreation in the City of Solana Beach LUP and General Plan. As conditioned, the subject development is consistent with these requirements. Site-specific geotechnical evidence has been submitted indicating that the existing principal structure at the top of the bluff is in danger. Based on the above findings, the proposed development is consistent with the Chapter 3 policies of the Coastal Act in that the need for the shoreline protective devices has been documented and its adverse impacts on coastal resources will be mitigated.

However, approval of the proposed project should not send a signal that there is no need to address a range of alternatives to armoring for other existing development. Planning for comprehensive protective measures must include a combination of approaches including limits on future bluff development, ground and surface water controls, and beach replenishment. Although the erosion potential on the subject site is such that action must be taken promptly, decisions regarding future shoreline protection should be done through a comprehensive planning effort that analyzes the impact of such a decision on the entire City shoreline.

Thus, the Commission finds the proposed development, as conditioned, is consistent with the Chapter 3 policies of the Coastal Act, and will not prejudice the ability of the City of Solana Beach to complete a certifiable local coastal program. These issues of shoreline planning will need to continue to be addressed in a comprehensive manner in the future through the City's LCP certification process

F. CONSISTENCY WITH THE CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

Section 13096 of the California Code of Regulations requires that a specific finding be made in conjunction with coastal development permit applications showing the application to be consistent with any applicable requirements of CEQA. Section 21080.5(d)(2)(A) of CEQA prohibits a proposed development from being approved if there are feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse effect that the activity may have on the environment.

The Coastal Commission's review and analysis of land use proposals has been certified by the Secretary of Resources as being the functional equivalent of environmental review under CEQA. The preceding coastal development permit findings in this staff report have discussed the relevant coastal resource issues with the proposal, and the permit conditions identify appropriate mitigations to avoid and/or lessen any potential for adverse impacts to said resources. The Commission incorporates these findings as if set forth here in full.

As such, there are no additional feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse environmental effects which approval of the proposed project, as conditioned, would have on the environment within the meaning of CEQA. Thus, if so conditioned, the proposed project will not result in any significant environmental effects for which feasible mitigation measures have not been employed consistent with CEQA Section 21080.5(d)(2)(A).

APPENDIX A

SUBSTANTIVE FILE DOCUMENTS

- City of Solana Beach certified LUP
- City of Solana Beach General Plan and Zoning Ordinance
- City of Solana Beach Resolution 2012-023 approved February 22, 2012
- Landscaping plans by David Reed Landscape Architects, dated June 10, 2013
- Project plans by Soil Engineering Construction, Inc., dated June 13, 2013
- Coastal Bluff Evaluation and Geotechnical basis of Design Report 245-249 Pacific Avenue Solana Beach, California, by TerraCosta Consulting Group, received July 6, 2012
- Coastal Development Permit Application Proposed Shoreline Stabilization 245-249 Pacific Avenue Memo, by TerraCosta Consulting Group, dated July 6, 2012
- Coastal Development Permit Application Proposed Shoreline Stabilization 249 Pacific Avenue Memo, by TerraCosta Consulting Group, dated June 14, 2013
- CDP Nos.: 6-13-025/Koman et. al., 6-12-050/Presnell, Graves, & Jokipii, 6-09-033/Garber et. al., 6-08-122/Winkler, 6-08-73/DiNoto, et.al, 6-08-022-X/Graves, 6-07-134/Brehmer, Caccavo, 6-07-133/Li, 6-07-132/Hawkins, 6-05-095/Stroben et. al., 6-05-72/Las Brisas, 6-04-83/Cumming & Johnson, 6-03-33/Surfsong, 6-02-84/Scism, 6-02-039-A1/Seascape Chateau, 3-02-024/Ocean Harbor House, 6-02-02/Gregg, Santana, 6-00-66/Pierce & Monroe, 6-00-035/Presnell & Ratkowski, 6-00-9/Del Mar Beach Club, 6-99-103/ Coastal Preservation Association, 6-99-100/Presnell et. al., 6-96-021/Ratkowski, 6-89-029/Haggerty, 5-87-576/Miser & Cooper, 6-87-371/Van Buskirk, 4-87-161/Pierce Family Trust and Morgan,
- LCPA #SOL-MAJ-1-13

APPENDIX B

PERMIT HISTORY OF THE TWO PROPERTIES TO THE SOUTH OF THE SUBJECT SITE THAT ALSO DO NOT CURRENTLY HAVE SHORELINE ARMORING:

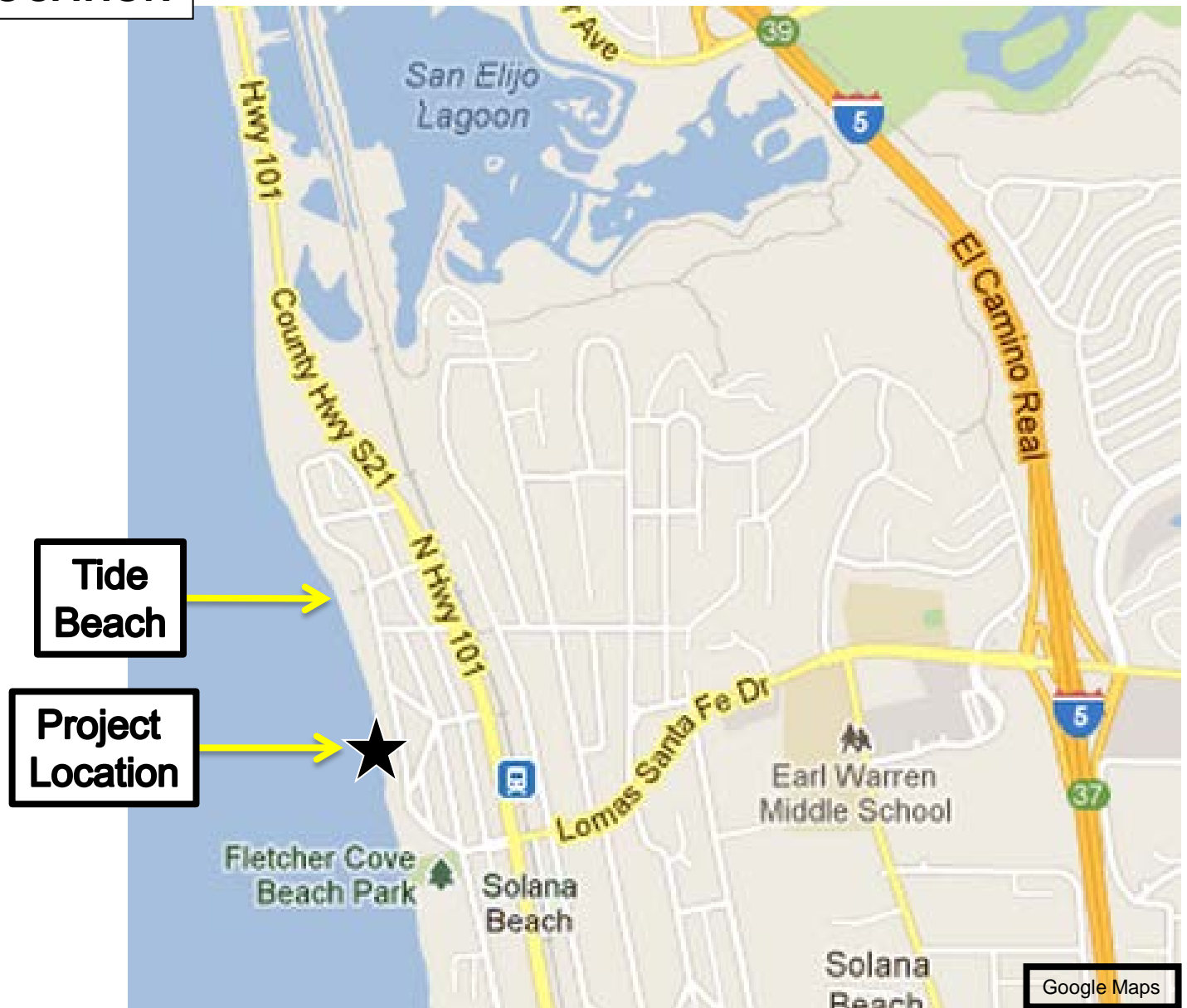
241 Pacific Avenue


- The existing single family bluff top home was constructed prior to the Coastal Act.
- In April of 1989, the Commission approved a remodel and a 2,040 sq. ft. second story addition to the residence (CDP #6-89-029/Haggerty).
- In October of 2008, the Commission approved the construction of nine drilled pier concrete caissons (approximately 30 in. diameter, 45 ft. depth and placed 8-ft. on center) with a grade beam on top supported with 6 tiebacks located approximately 5 ft. seaward of the existing residence (6-07-132/Hawkins). The bluff seaward of the caissons failed soon after installation and the caissons are currently exposed.
- The exposed caissons represent the only shoreline armoring fronting the site.

235 Pacific Avenue

- The existing single family bluff top home was constructed in 1954.
- Photographs of the site between 1972 and present show concrete gunite on the upper bluff. Recent photographs of the concrete gunite appear to show that it is failing.
- There is no CDP history for this property and there is no shoreline armoring fronting the subject site (aside from the failing concrete gunite).

PROJECT LOCATION



 California Coastal Commission	EXHIBIT NO. 1
	APPLICATION NO. 6-13-0437
	Project Location

PROPOSED SITE PLAN

261 PACIFIC

255 PACIFIC

249 PACIFIC

245 PACIFIC

241 PACIFIC

235 PACIFIC

Existing Seawall

Proposed Extension

Extended Useful Life for 26 ft.-long Portion of Existing Seawall

LEGEND

- CONCRETE
- BRICK
- WOOD RAIL FENCE
- WOOD FENCE
- PLANTER
- SEAWALL

NOTE:

0' ORIGINAL

EXHIBIT NO. 2

APPLICATION NO. 6-13-0437

Site Plan

249 Pacific Avenue Shoreline Stabilization Project

By: Mohammad Sammak, City Engineer

APPROVED FOR CONSTRUCTION

BENCH MARK

CITY OF SOLANA BEACH

ENGINEERING DEPARTMENT

DRAWING NO. SBGR-

SHEET 5 OF 14

TERRACOSTA CONSULTING GROUP

ENGINEERS & GEOLOGISTS

3690 MURPHY CANYON ROAD, SUITE 200

SAN DIEGO, CALIFORNIA 92123

(619) 573-6900

PROFESSIONAL ENGINEER

No. 23792

Exp. 12/31/13

CIVIL

STATE OF CALIFORNIA

Existing Seawall

Proposed Extension

Extended Useful Life for 26 ft.-long Portion of Existing Seawall

APPLICATION N°
6-13-0437

Site Plan



California Coastal Commission

TERRACOSTA CONSULTING GROUP
ENGINEERS & GEOLOGISTS
3890 MURPHY CANYON ROAD, SUITE 200
SAN DIEGO, CALIFORNIA 92123
(658) 573-6900

CITY OF SOLANA BEACH

PROPOSED REPAIR FOR: **249 PACIFIC AVENUE
SHORELINE STABILIZATION PROJECT**

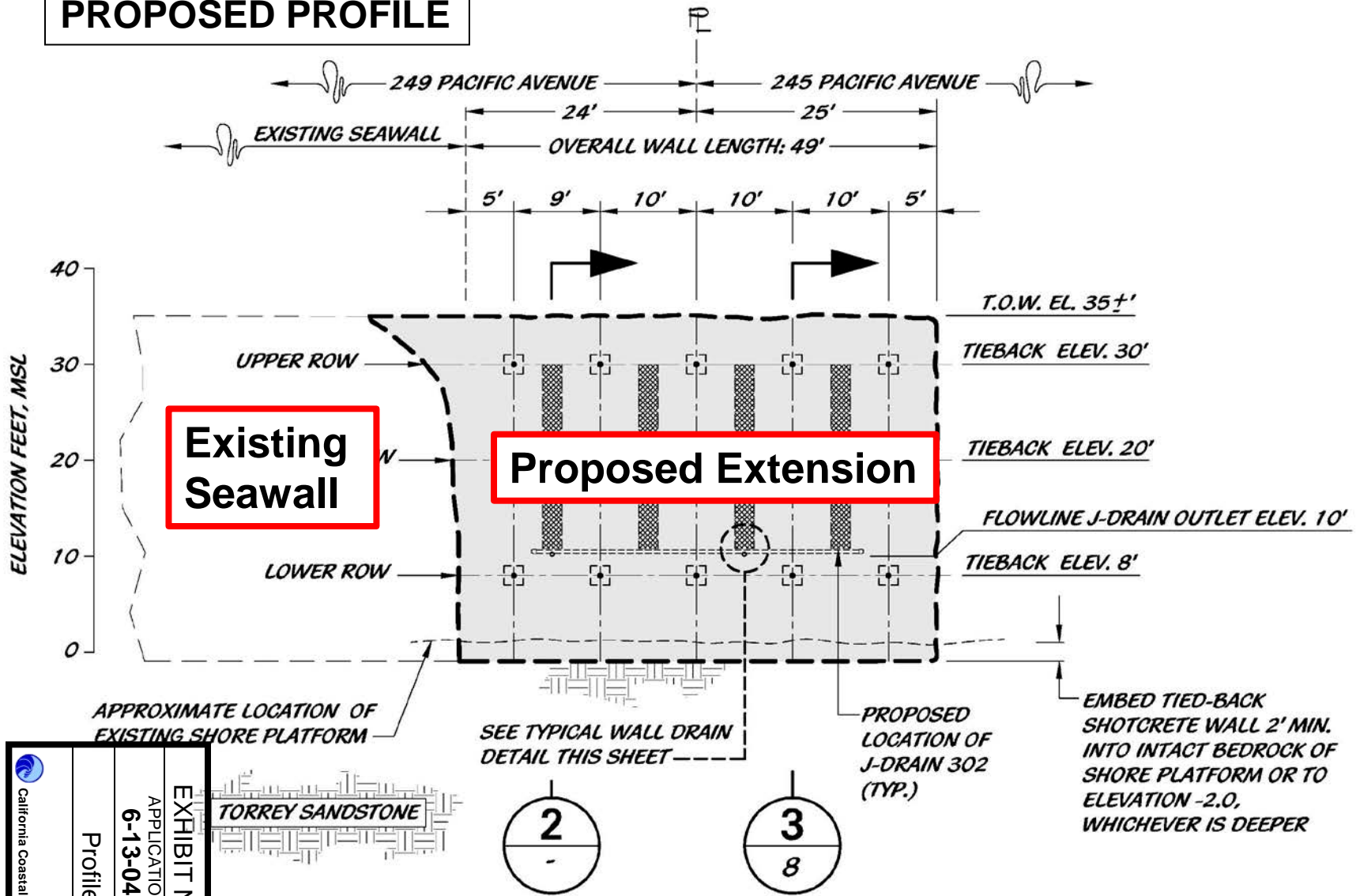
ENGINEERING DEPARTMENT

DRAWING NO.

SBGR-

SHEET 5 OF 1

PROPOSED PROFILE



35' HIGH TIED-BACK SHOTCRETE SEAWALL - PROFILE


SCALE: 1"=10' (HORIZ.:VERT.)



Approved Extension

DRAWING NO.
SBGR-
SHEET 5 OF 1

APPLICATION NO.

EXHIBIT NO. 4
APPLICATION NO. 6-13-0437
Revised Site Plan
 California Coastal Commission

		ENGINEER OF WORK	
RF		By: <u>WALTER F. CRAMPTON</u>	
Drawn By		R.C.E.: 23792	Exp:

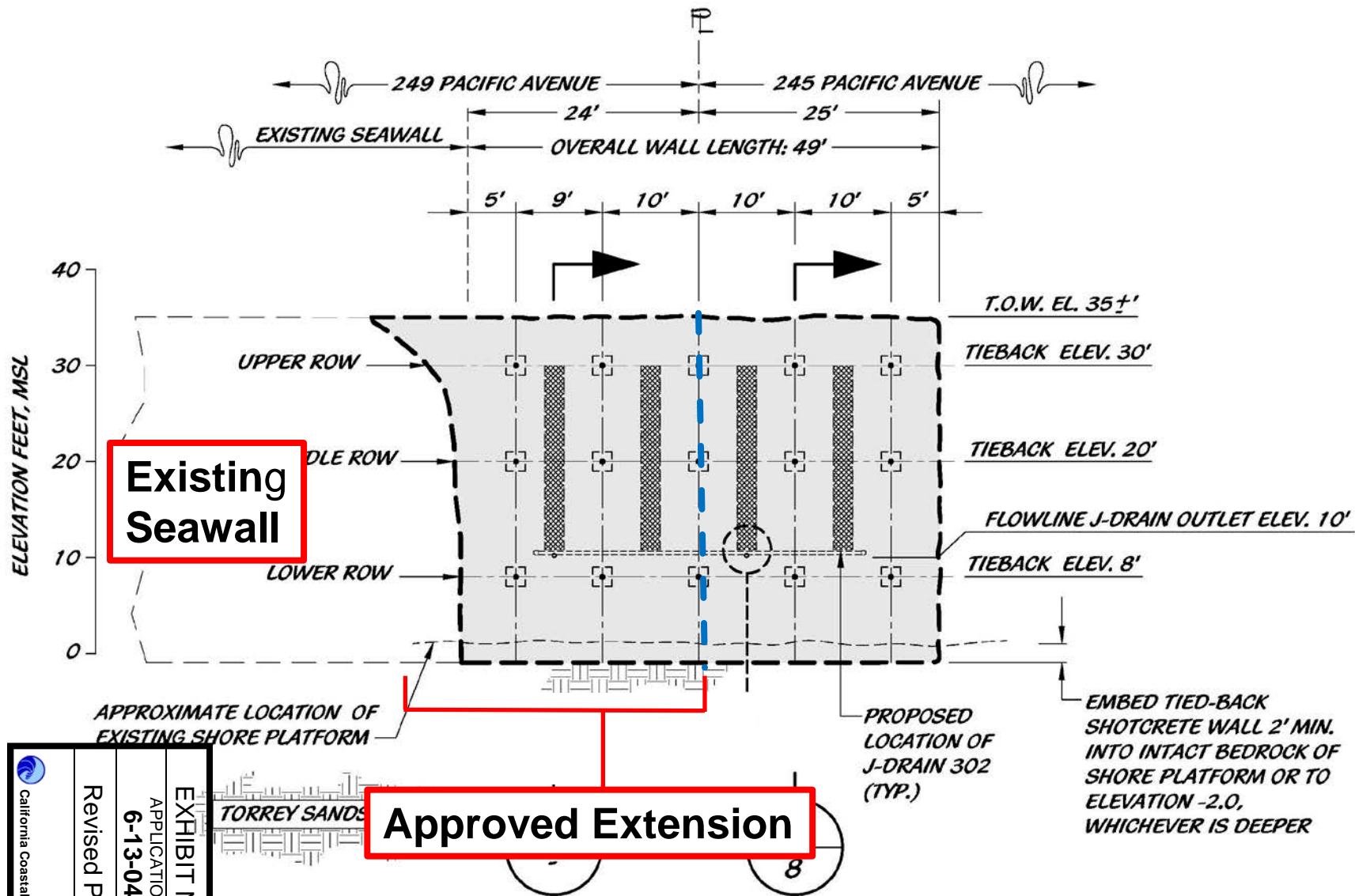
Date: _____
d Sammak, City Engle
146 Exp: 06-30-1

DESCRIPTION: SDOOPS-448 ID 2" BR. DISK IN TC PER ID
14432 148815 1960 TRANSVERSE POINT LS 4300 COUNTY
OF SAN DIEGO
LOCATION: BRASSPLUG IN THE TOP OF CURB AT SOUTHEAST
CORNER OF VA DE LA VALLE AND SOLANA CIRCLE
ELEV: 62.647 DATE: M.S.L.

CITY OF SOLE
PROPOSED REPAIR FOR

**249 PACIFIC AVENUE
SHORELINE STABILIZATION PROJECT**

REVISED FINAL PLAN CONDITION 1A – PROFILE



35' HIGH TIED-BACK SHOTCRETE SEAWALL - PROFILE

SCALE: 1"=10' (HORIZ.:VERT.)



California Coastal Commission

Revised Profile

6-13-0437

APPLICATION NO.

EXHIBIT NO. 5

SITE PHOTO 1

2013

249 (subject site)



352 ft./8 Property Seawall



California Coastal Commission

EXHIBIT NO. 6
APPLICATION NO.
6-13-0437
Site Photo 1

SITE PHOTO 2

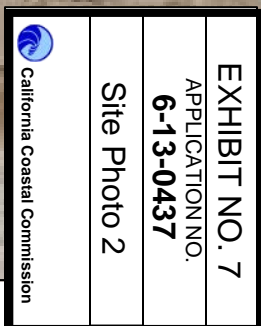
249 (subject site)

245

241

235

2013



SAND MITIGATION CALCULATIONS (24 ft.-Long Extension)

Site-specific values for equation variables:

$$S = 0.75$$

$$W = 24 \text{ ft}$$

$$L = 20 \text{ years}$$

$$R = 0.3 \text{ ft/yr}$$

$$H = h_s + h_u = 87 \text{ ft}$$

$$R_{cu} = 0.3 \text{ ft/yr}$$

$$R_{cs} = 0$$

$$\text{Sand Cost} = \$16.29/\text{cy}$$

In 2009, bids were obtained from three contractors to provide approximately 3,000 cy of sand for a nearby project. Copies of those bids are attached. The average sand cost of the three bids is \$16.29/cy, which we have used for this project.

Assuming $R_{cu} = R$ and $R_{cs} = 0$, V_b can be simplified as follows:

$$(S \times W \times L \times R \times (h_s + h_u))/27$$

Thus,

$$V_b = 0.75 \times 24 \times 20 \times 0.3 \times 87/27$$

$$V_b = 348 \text{ yd}^3$$

$$\text{Sand Mitigation Fee} = 348 \times \$16.29/\text{yd} = \$5,668.92$$



California Coastal Commission

Sand Calcs

6-13-0437

APPLICATION NO.

EXHIBIT NO. 8

CDP 6-96-021/Ratkowski - Special Conditions

III. Special Conditions.

The permit is subject to the following conditions:

1. Final Project Plans. Prior to the issuance of the coastal development permit, the applicant shall submit for review and written approval of the Executive Director, final building, foundation, drainage and grading plans, approved by the City of Solana Beach, which shall include the following:

a.. All surface drainage shall be collected and directed away from the edge of the bluff towards the street.

b. Foundation plans shall be in substantial conformance with the preliminary foundation plans submitted with this application, which incorporate a foundation design that does not preclude, but facilitates, removal of portions of the home seaward of 40 feet, or other incremental portions of the house, or the entire house in the future.

c. Said plans shall clearly indicate both the 25 ft. and 40 ft. blufftop setback lines (measured from the top of the bluff as depicted on the plans by Edward M. Eginton dated 3/18/96) and reflect compliance by the applicant with one of the following options:



California Coastal Commission

6-96-021 Conditions

6-13-0437

APPLICATION NO.

EXHIBIT NO. 9

1. Revised site plan shall indicate a minimum 40 ft. setback for all portions of the principal residence from the edge of the bluff as depicted on the plans by Edward M. Eginton dated 3/18/96 (ref. Exhibit #2). Accessory structures permitted seaward of the residence shall be at grade (no extensive footings) and no closer than 5 feet from the bluff edge.

OR

2. Provision of a minimum 25 ft. setback for all portions of the principal residence from the top edge of the bluff, utilizing the bluff edge depicted on the plans by Edward M. Eginton dated 3/18/96, and recordation of a deed restriction pursuant to Special Condition #2 of CDP #6-96-21 below.

2. Deed Restriction. Prior to the issuance of the coastal development permit; and only if the applicant chooses option c.2 of Special Condition #1 above, the applicant shall record a deed restriction in a form and content acceptable to the Executive Director, which shall provide the following:

a. That the landowner waives all right to construct any upper or lower bluff stabilization devices (other than "preemptive" filling of seacaves at the base of the bluff as approved through a coastal development permit) to protect that portion of the residence located seaward of the 40 ft. blufftop setback as depicted on the plans submitted in accordance with Special Condition #1, in the event that such portion of the structure is threatened or subject to damage from erosion, storm wave damage, or bluff failure in the future.

b. That in the event the edge of the bluff recedes to within 10 feet of the principal residence, a geotechnical investigation shall be prepared by a licensed coastal engineer and geologist retained by the applicant, that addresses whether any portions of the residence are threatened, and identifies all those immediate or potential future alternative measures necessary or desired to stabilize the principal residence without shore or bluff protection, including, but not limited to, removal or relocation of those portions of the principal residence located seaward of the 40 ft. blufftop setback as depicted on the plans submitted in accordance with Special Condition #1.

c. If erosion or bluff failure proceeds to a point where the edge of the bluff recedes to within 10 feet of the principal residence, and any portion of the principal residence located seaward of the 40 ft. blufftop setback as depicted on the plans submitted in accordance with Special Condition #1 is determined by a geotechnical report and the City of Solana Beach to be unsafe for occupancy, then the landowner shall, in accordance with a coastal development permit, remove that portion of the structure in its entirety.

The document shall be recorded free of all prior liens and encumbrances and shall run with the land and bind all successors and assigns.

3. Assumption of Risk: Prior to the issuance of the coastal development permit, the applicant [and landowner] shall execute and record a deed restriction, in a form and content acceptable to the Executive Director, which shall provide: (a) that the applicant understands that the site may be subject to extraordinary hazard from bluff retreat and erosion and the applicant assumes the liability from such hazards, and (b) the applicant unconditionally waives any claim of liability on the part of the Commission or its successors in interest for damage from such hazards and agrees to indemnify and hold harmless the Commission, its offices, agents, and employees relative to the Commission's approval of the project for any damage. The document shall run with the land, binding all successors and assigns, and shall be recorded free of prior liens.

4. Future Shoreline Protective Works. Prior to the issuance of the coastal development permit, the applicant shall record a deed restriction in a form and content acceptable to the Executive Director, which shall provide that in the event any bluff or shoreline protective work is anticipated in the future to protect those portions of the residence sited inland of the 40 ft. blufftop setback as depicted on the plans submitted in accordance with Special Condition #1, the applicant acknowledges that as a condition of filing an application for a coastal development permit, the applicant must provide the Commission or its successor agency with sufficient evidence enabling it to consider all alternatives to bluff protective works, including, but not limited to, consideration of relocation of portions of the residence that are threatened, structural underpinning, or other remedial measures identified to stabilize the residence that do not include bluff or shoreline stabilization devices. The document shall be recorded free of all prior liens and encumbrances and shall run with the land and bind all successors and assigns.

5. Future Development. Prior to the issuance of the coastal development permit, the applicant shall execute and record a document, in a form and content acceptable to the Executive Director, stating that the subject permit is only for the development described in the coastal development permit #6-96-21; and that any future additions or other development as defined in Public Resources Code Section 30106 will require an amendment to permit #6-96-21 or will require an additional coastal development permit from the California Coastal Commission or from its successor agency, unless such development is explicitly exempted under the Coastal Act and the Commission's Code of Regulations. The document shall be recorded as a covenant running with the land binding all successors and assigns in interest to the subject property.

6. Landscaping Plan. Prior to the issuance of the coastal development permit, the applicant shall submit a detailed landscape plan indicating the type, size, extent and location of all plant materials, the proposed irrigation system and other landscape features. Drought and salt tolerant native or naturalizing plant materials shall be utilized to the maximum extent feasible. Plans shall also indicate that any existing permanent irrigation system located seaward of the 40 ft. blufftop setback shall be capped or removed and that no landscaping, accessory structures or permanent improvements shall be located within five feet of the bluff edge. Said plan

shall be first approved by the City of Solana Beach and submitted to, reviewed and approved in writing by the Executive Director.

7. Disposal of Graded Spoils. Prior to the issuance of the coastal development permit, the applicant shall identify the location for the disposal of graded spoils. If the site is located within the coastal zone, a separate coastal development permit or permit amendment shall first be obtained from the California Coastal Commission or its successors in interest.

CDP 6-99-100/Presnell et. al. - Special Conditions

COASTAL DEVELOPMENT PERMIT NO. 6-99-100

Page 3 of 9

SPECIAL CONDITIONS:

The permit is subject to the following conditions:

1. Final Plans. PRIOR TO THE ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicants shall submit for review and written approval of the Executive Director, final seawall, site, landscape, irrigation and drainage plans in substantial conformance with the submitted plans dated 6/8/99 by Group Delta Consultants, that include the following measures to mitigate the impacts of the seawall and address overall site stability. Said plans shall first be approved by the City of Solana Beach and include the following:

- a. Sufficient detail regarding the construction method and technology utilized for texturing and coloring the seawall. Said plans shall confirm, and be of sufficient detail to verify, that the seawall color and texture closely matches the adjacent natural bluffs, including provision of a color board indicating the color of the fill material.
- b. The seawall shall conform as closely as possible to the natural contour of the bluff.
- c. Any existing permanent irrigation system located within the geologic setback area (40 feet from the bluff edge) on any of the eight bluff top sites shall be removed or capped.
- d. All runoff from impervious surfaces on each of the eight sites shall be collected and directed away from the bluff edge towards the street.
- e. Existing accessory improvements (i.e., decks, patios, walls, etc.) located in the geologic setback area on any of the eight sites shall be detailed and drawn to scale on the final approved site plan.
- f. During construction of the approved development, disturbance to sand and intertidal areas shall be minimized to the maximum extent feasible. All excavated beach sand shall be redeposited on the beach. Local sand, cobbles or shoreline rocks shall not be used for backfill or for any other purpose as construction material.
- g. The references to use of geotubes shall be removed from the plans.

The permittee shall undertake the development in accordance with the approved plans. Any proposed changes to the approved plans shall be reported to the Executive Director. No changes to the plans shall occur without a Coastal Commission approved amendment to this coastal development permit unless the Executive Director determines that no amendment is required.



California Coastal Commission

6-99-100 Conditions

6-13-0437

APPLICATION NO.

EXHIBIT NO. 10

2. Mitigation for Impacts to Sand Supply. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicants shall provide evidence, in a form and content acceptable to the Executive Director, that a fee of \$99,073 has been deposited in an interest bearing account designated by the Executive Director, in-lieu of providing the total amount of sand to replace the sand and beach area that would be lost due to the impacts of the proposed protective structure. The methodology used to determine the appropriate mitigation fee for the subject site(s) is that described in the staff report dated 6/24/99 prepared for Coastal Development Permit #6-99-100. All interest earned shall be payable to the account for the purposes stated below.

The purpose of the account shall be to establish a beach sand replenishment fund to aid SANDAG, or a Commission-approved alternate entity, in the restoration of the beaches within San Diego County. The funds shall solely be used to implement projects which provide sand to the region's beaches, not to fund operations, maintenance or planning studies. The funds shall be released only upon approval of an appropriate project by the Executive Director of the Coastal Commission. The funds shall be released as provided for in a MOA between SANDAG, or a Commission-approved alternate entity and the Commission, setting forth terms and conditions to assure that the in-lieu fee will be expended in the manner intended by the Commission. If the MOA is terminated, the Commission can appoint an alternative entity to administer the fund.

3. Monitoring Program. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicants shall submit to the Executive Director for review and written approval, a monitoring program prepared by a licensed geologist or geotechnical engineer for the site and seawall which provides for the following:

- a. An annual evaluation of the condition and performance of the seawall, addressing whether any significant weathering or damage has occurred that would adversely impact the future performance of the seawall. This evaluation shall include an assessment of the color and texture of the wall comparing the appearance of the wall to the surrounding native bluffs.
- b. Annual measurements of the distance between each residence and the bluff edge (as defined by Section 13577 of the California Code of Regulations) at 6 or more locations. The locations for these measurements shall be the same as those identified on the as-built plans required in Special Condition #6 of this permit, and identified through permanent markers, benchmarks, survey position, written description, etc. so that annual measurements can be taken at the same bluff location and comparisons between years can provide information on bluff retreat.
- c. Annual measurements of any differential retreat between the natural bluff face and the seawall face, at both ends of the seawall and at 20-foot intervals (maximum) along the top of the seawall face/bluff face intersection. The program shall describe the method by which such measurements shall be taken.

- d. Provisions for submittal of a report to the Executive Director of the Coastal Commission on May 1 of each year (beginning the first year after construction of the project is completed), for the life of the project. Each report shall be prepared by a licensed geologist or geotechnical engineer. The report shall contain the measurements and evaluation required in sections a, b, and c above. The report shall also summarize all measurements and provide some analysis of trends, annual retreat or rate of retreat, and the stability of the overall bluff face, including the upper bluff area, and the impact of the seawall on the bluffs to either side of the wall, which do not include the construction of structures on the face of the bluff. In addition, each report shall contain recommendations, if any, for necessary maintenance, repair, changes or modifications to the project.
- e. An agreement that the permittees shall apply for a coastal development permit within three months of submission issuance of the report required in subsection d. above (i.e., by August 1) for any necessary maintenance, repair, changes or modifications to the project recommended by the report that require a coastal development permit.

The permittee shall undertake monitoring in accordance with the approved plan. Any proposed changes to the approved plan shall be reported to the Executive Director. No changes to the plan shall occur without a Coastal Commission approved amendment to this coastal development permit unless the Executive Director determines that no amendment is required.

4. State Lands Commission Approval. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicants shall submit to the Executive Director for review and written approval, a written determination from the State Lands Commission that:

- a) No state lands are involved in the development; or
- b) State lands are involved in the development, and all permits required by the State Lands Commission have been obtained; or
- c) State lands may be involved in the development, but pending a final determination of state lands involvement, an agreement has been made by the applicant with the State Lands Commission for the project to proceed without prejudice to the determination.

5. Storage and Staging Areas/Access Corridors. PRIOR TO THE ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit to the Executive Director for review and written approval, final plans indicating the location of access corridors to the construction site and staging areas. The final plans shall indicate that:

- a. No overnight storage of equipment or materials shall occur on sandy beach or public parking spaces with the exception of 12 parking spaces within the City-owned parking lot on Pacific Avenue, southeast of Fletcher Cove. During the construction stages of the project, the permittee shall not store any construction materials or waste where it will be or could potentially be subject to wave erosion and dispersion. In addition, no machinery shall be placed, stored or otherwise located in the intertidal zone at any time, except for the minimum necessary to construct the seawall. Construction equipment shall not be washed on the beach or in the Fletcher Cove parking lot.
- b. Access corridors shall be located in a manner that has the least impact on public access to and along the shoreline.
- c. No work shall occur on the beach on weekends or holidays between Memorial Day weekend and Labor Day of any year.
- d. The applicant shall submit evidence that the approved plans/notes have been incorporated into construction bid documents. The staging site shall be removed and/or restored immediately following completion of the development.

The permittee shall undertake the development in accordance with the approved plans. Any proposed changes to the approved plans shall be reported to the Executive Director. No changes to the plans shall occur without a Coastal Commission approved amendment to this coastal development permit unless the Executive Director determines that no amendment is required.

6. Storm Design/As-Built Plans. PRIOR TO THE ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit certification by a registered civil engineer that the proposed shoreline protective device is designed to withstand storms comparable to the winter storms of 1982-83.

Within 60 days following completion of the project, the permittee shall submit as-built plans of the approved seawall which includes measurements of the distance between each residence and bluff edge (as defined by Section 13577 of the California Code of Regulations) taken at 6 or more locations. The locations for these measurements shall be identified through permanent markers, benchmarks, survey position, written description, etc. to allow annual measurements to be taken at the same bluff location and comparisons between years to provide information on bluff retreat.

In addition, within 60 days following completion of the project, the permittee shall submit certification by a registered civil engineer, acceptable to the Executive Director, verifying the seawall has been constructed in conformance with the approved plans for the project.

7. Future Response to Erosion. If in the future the permittee seeks a coastal development permit to construct bluff or shoreline protective devices, the permittee will be required to include in the permit application information concerning alternatives to the proposed bluff or shoreline protection that will eliminate impacts to scenic visual resources, recreation and shoreline processes. Alternatives shall include but not be limited to: relocation of all or portions of the principle structures that are threatened, structural underpinning, and other remedial measures capable of protecting the principal structures and providing reasonable use of the property, without constructing bluff or shoreline stabilization devices. The information concerning these alternatives must be sufficiently detailed to enable the Coastal Commission to evaluate the feasibility of each alternative, and whether each alternative is capable of protecting existing structures that are in danger from erosion. No additional bluff or shoreline protective devices shall be constructed on the adjacent public bluff face above the approved seawall or on the beach in front of the proposed seawall unless the alternatives required above are demonstrated to be infeasible. No shoreline protective devices shall be constructed in order to protect ancillary improvements (patios, decks, fences, landscaping, etc.) located between the principal residential structures and the ocean.

PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, each applicant shall execute and record a deed restriction, in a form and content acceptable to the Executive Director incorporating all of the above terms of this condition. The deed restriction shall include a legal description of the applicant's entire parcel. The deed restriction shall run with the land, binding all successors and assigns, and shall be recorded free of prior liens that the Executive Director determines may affect the enforceability of the restriction. This deed restriction shall not be removed or changed without a material amendment to this coastal development permit approved by the Commission or an immaterial amendment approved by the Executive Director.

8. Assumption of Risk. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, each applicant shall execute and record a deed restriction, in a form and content acceptable to the Executive Director, which shall provide: (a) that each applicant understands that the site may be subject to extraordinary hazard from bluff collapse and erosion and the applicant assumes the liability from such hazards; and (b) each applicant unconditionally waives any claim of liability on the part of the Commission or its successors in interest for damage from such hazards and agrees to indemnify and hold harmless the Commission, its officers, agents, and employees relative to the Commission's approval of the project for any damage due to natural hazards. The deed restriction shall run with the land, binding all successors and assigns, and shall be recorded free of prior liens that the Executive Director determines may affect the enforceability of the restriction.

This deed restriction shall not be removed or changed without a Coastal Commission-approved amendment to this coastal development permit unless the Executive Director determines that no amendment is required.

9. Permission from Property Owner. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicants shall submit to the Executive Director for review and written approval, written permission from the owner(s) of the bluff face located below 296 Pacific Avenue to construct the seawall approved herein.

10. Amend Deed Restriction. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicants shall obtain an amendment to Special Condition #6 of Coastal Development Permit #6-89-366 to allow construction of the shoreline protective device approved herein on the bluff face below 309 Pacific Avenue.

11. Groundwater Impacts. Plans for the installation of hydraugers in the bluff, the construction of wells along the eastern property line, or other similar means to reduce the potential for groundwater to reach the bluff face, shall be submitted to the Executive Director for review and written approval, if, from examination of soil borings and site inspections during seawall construction, the project engineer should determine that groundwater and its potential to trigger block failures exists. Said groundwater system shall be installed concurrent with construction of the seawall. In addition, a maintenance program for such groundwater removal systems shall also be submitted and receive written approval of the Executive Director. However, any changes to the approved seawall proposed as a result of the presence of groundwater, shall require the review and approval of the Commission through an amendment to this coastal development permit. Said program shall assure the system approved herein is maintained for efficient operation at all times.

12. Future Maintenance/Debris Removal. Within 15 days of completion of construction of the protective device the permittees shall remove all debris deposited on the beach or in the water as a result of construction of shoreline protective device. The permittees shall also be responsible for the removal of debris resulting from failure or damage of the shoreline protective device in the future. In addition, the permittee shall maintain the permitted seawall in its approved state except to the extent necessary to comply with the requirements set forth below. Maintenance of the seawall shall include maintaining the color, texture and integrity. Any change in the design of the project or future additions/reinforcement of the seawall beyond minor regrouting or other exempt maintenance as defined in Section 13252 of the California Code of Regulations to restore the seawall to its original condition as approved herein, will require a coastal development permit. Any future maintenance or strengthening of the seawall shall not result in any seaward encroachment of the wall beyond that which is approved herein. However, in all cases, if after inspection, it is apparent that repair and maintenance is necessary, including maintenance of the color of the wall to ensure a continued match with the surrounding native bluffs, the permittee shall contact the Commission office to determine whether permits are necessary, and shall subsequently apply for a coastal development permit for the required maintenance.

13. Relinquishment of Previous Permit. Issuance of this permit, CDP #6-99-100, supercedes CDP #6-99-56. Within 5 days after issuance of CDP #6-99-100, the applicants for CDP #6-99-56 (Buzz Colton, Richardson Trust, and William Bennett) shall submit a written statement surrendering CDP #6-99-56 and agreeing that CDP #6-99-100 supersedes CDP #6-99-56. The original of CDP #6-99-56 shall be attached to such statement.

(6-99-100p.doc)

MEMORANDUM FROM COMMISSION GEOLOGIST

STATE OF CALIFORNIA—NATURAL RESOURCES AGENCY

EDMUND G. BROWN, JR., GOVERNOR

CALIFORNIA COASTAL COMMISSION

45 FREMONT STREET, SUITE 2000
SAN FRANCISCO, CA 94105-2219
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22 April 2014

GEOTECHNICAL REVIEW MEMORANDUM

To: Eric Stevens, Coastal Program Analyst
From: Mark Johnsson, Staff Geologist
Re: Presnell/Graves LLC Application (6-13-0437)

In connection with the above-referenced permit application, I have reviewed the following documents:

- 1) TerraCosta Consulting Group, 2012, "Coastal bluff evaluation and geotechnical basis of design report, 245-249 Pacific Avenue, Solana Beach, California", 22 p. geotechnical report dated 6 January 2012 and signed by D. B. Nevius (GE 2789), B. R. Smillie (CEG 207) and W. F. Crampton (GE 245).
- 2) TerraCosta Consulting Group, 2012, "Coastal development permit application, Proposed shoreline stabilization, 245-249 Pacific Avenue, Solana Beach, California", 3 p. letter report dated 6 July 2012 and signed by W. F. Crampton (GE 245).
- 3) TerraCosta Consulting Group, 2012, "Response to review comments, Proposed shoreline stabilization, 245-249 Pacific Avenue, Solana Beach, California", 6 p. letter report dated 19 October 2012 and signed by W. F. Crampton (GE 245).
- 4) TerraCosta Consulting Group, 2013, "Coastal Development Permit Application, Proposed shoreline stabilization, 249 Pacific Avenue, Solana Beach, California", 4 p. letter report dated 14 June 2013 and signed by W. F. Crampton (GE 245).
- 5) TerraCosta Consulting Group, 2013, "Response to Coastal Commission staff comments, Proposed shoreline stabilization, 249 Pacific Avenue, Solana Beach, California", 6 p. letter report dated 20 August 2013 and signed by W. F. Crampton (GE 245).

In addition, I have visited the site on several occasions, most recently on 28 February 2014. I also have had numerous conversations with the principal project consultant, Mr. Walt Crampton, regarding site conditions and the proposed project.

Reference (1) provides a description of the site conditions and proposed solutions to the perceived erosional threats to the principal structures at 245 and 249 Pacific Avenue, Solana Beach. Like all of the Solana Beach coastline, the coastal bluff at the site consists of a lower bluff approximately 30 feet high composed of relatively dense bedrock of the Torrey Sandstone, overlain by an upper bluff consisting of less consolidated sands and gravels, collectively referred to as marine terrace deposits. The lower ten feet of these deposits are very well sorted, unconsolidated sands that form very unstable slopes when exposed in the coastal bluff. Overlying this "clean sand lens" is approximately 50 feet of sands and gravels, previously referred to as the Baypoint Formation (now general referred to as "older paralic deposits.") The report documents ongoing slope failures in the upper bluff that have exposed the clean sand lens.



California Coastal Commission

CCC Geologist Memo

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EXHIBIT NO. 11

These failures result in landslide and erosion scarps that encroach toward the structures on the bluff top. Such failures, often triggered by collapse of the more resistant Torrey Sandstone, are the dominant failure mode for the coastal bluffs in Solana Beach. Numerous properties north and south of the subject site have been protected from such failures by the construction of approximately 35-foot high seawalls which serve to protect the lower bluff from marine erosion, support the Torrey Sandstone by tiebacks, and encapsulate the clean sand lens. The report proposes a similar solution at the subject site. The need for this protection is justified in the report by the ongoing nature of upper bluff failures on both parcels (as well as the one to the south, at 241 Pacific Avenue), and quantitative slope stability analyses which show very low factors of safety (approximately 1.0) for cross sections through both properties. However, the most likely failure planes showing such low factors of safety daylight only 7 to 8 feet landward of the bluff edge. I concur with the soil strength parameters and methodology used in these analyses. The structures both are located approximately 22 to 27 feet from the bluff edge. Accordingly, the most likely failure would still leave the new bluff edge some 14 to 19 feet from the structures.

Reference (2) supports the CDP application for a seawall extending across both parcels at 245 and 249 Pacific Avenue. It documents erosion of the upper bluff from 2010 to 2012. It notes that the northern portion of the parcel at 249 Pacific Avenue is protected by a previously permitted and constructed seawall, but that the southern half of the property, and all of the bluff at 245 Pacific Avenue, is subject to ongoing erosion. Further slope stability analyses show that the location of the structures have factors of safety of approximately 1.1. Again, I note that a failure extending 22-27 feet back from the bluff edge is not the most likely failure surface on either parcel. The report provides additional slope analyses demonstrating, to my satisfaction, that a factor of safety of 1.2 exists 40 feet from the current bluff edge. The report opines that such a low factor of safety indicates that a seawall or other shoreline protective structure is justified *for structures landward of the 40 foot setback line*. Further analyses show that, following the most likely failure modeled above (loss of 7-8 feet of bluff top), the factors of safety are correspondingly reduced at both structures. Although the report concludes that such a low factor of safety requires protection from bluff collapse for structures *landward* of the 40 foot setback line, it is my opinion that it will be many years before lower and upper bluff collapses will cumulatively extend 40 feet from the current bluff edge. Thus, I conclude that a shoreline protective device is not warranted at this time to protect the portion of the structure landward of the 40-foot setback line at 245 Pacific Avenue.

Reference (3) was produced to answer Commission Staff questions about the proposed project and the nature of expected bluff retreat at this location. Asked for examples of previous bluff failures that have resulted in 40 feet of bluff retreat under similar geologic conditions, qualitative descriptions of ongoing failures near the site were provided, but it is my opinion that they do not demonstrate any imminent danger to portions of the structure located 40 feet from the bluff edge. Ongoing discussions with the project engineer, Walt Crampton, raised the issue of outflanking of the proposed seawall and increased risk of the home at 249 Pacific Avenue if at least a portion of the proposed seawall extension at 245 Pacific Avenue is not constructed. I agree with this assessment, but cannot provide an estimate of the amount of time before such outflanking would put the structure at 249 Pacific Avenue in danger from erosion.

After consultation with Commission staff, who explained the problems with shoreline protection for 245 Pacific Avenue due to a deed restriction, the CDP application in reference (4) was submitted. Documenting additional failures at 241 Pacific Avenue that have migrated to the north and south, the application is for a seawall extending across the remaining unprotected part of 249 Pacific Avenue, and the northern 25 feet of the bluff at 245 Pacific Avenue. The purpose of the extension onto the bluff below 245 Pacific Avenue would be to delay outflanking of the seawall at 249 Pacific Avenue, ensuring that the structure at 249 Pacific Avenue would remain protected. The report states that “[w]ith over 60 feet of marginally stable terrace deposits atop the cliff-forming Torrey Sandstone, the typical zone of influence affected by flanking would be 50% of this height, or 30+ feet.” This formula is not supported by references, and I am not familiar with such a “typical zone of influence.” I do agree, however, that extending the seawall 25 feet south of the property line above the bluff fronting 249 Pacific Avenue (a total extension of 49 feet) would protect the threatened bluff-top structure at 249 Pacific Avenue for a greater period of time than extending the seawall only to the southern border of 249 Pacific Avenue. However, in the short term, extending the proposed seawall only 24 feet to the southern border of 249 Pacific Avenue will provide adequate protection from coastal bluff erosion to the threatened bluff top structure at 249 Pacific Avenue. Thus, extending the seawall onto the bluff fronting 245 Pacific Avenue is not required, at this time, to protect the existing structure on 249 Pacific Avenue from erosion. Reference (5) answers some additional questions from Commission staff, but does not add substantially to my analysis above.

To summarize, I concur that the structures at 245 and 249 Pacific Avenue are threatened by coastal erosion. The degree of risk appears to be increasing as upper bluff failures continue. The fact that such failures are continuing leads me to conclude that the risk to the structures is marginally at the level that the Commission adopts when finding that a threat is “imminent” or likely within the next 2 to 3 years. The useful life of the 26 foot-long portion of the existing seawall fronting 249 Pacific Avenue will be increased by being protected from outflanking by the extension proposed on the southern half of the property at 249 Pacific Avenue. Likewise, the useful life will be further increased, as will the proposed seawall, if a further extension is constructed on the northern half of 245 Pacific Avenue. It is not possible to quantify authoritatively the length of time that the useful life would be increased, but, based on my experience in geologically similar areas of Solana Beach, it is my opinion that it would likely be at least 10 years, and perhaps 20 or more years.

I hope that this review is helpful. Please do not hesitate to contact me with any further questions.

Sincerely,



Mark Johnsson, Ph.D., CEG, CHG
Staff Geologist